**COMPAQ**

# MAINTENANCE & SERVICE GUIDE

Compaq Deskpro 1000
Series of Personal Computers

# Notice

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## *Maintenance & Service Guide*

**Compaq Deskpro 1000 Series of Personal Computers**

First Edition (January 1998)
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**Compaq Computer Corporation**

*CPS*

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# *preface*

This *Maintenance & Service Guide* is a troubleshooting guide that can be used for reference when servicing the Compaq Deskpro 1000 Series of Personal Computers.

Compaq Computer Corporation reserves the right to make changes to the Compaq Deskpro 1000 Series of Personal Computers without notice.

## Symbols and Conventions

The following words and symbols mark special messages throughout this guide:

> **CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of data.

> **WARNING:** Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.

> ✎ Text set off in this manner presents clarifying information, specific instructions, commentary, sidelights, or other points of information.

The following format conventions distinguish elements of the text throughout this guide:

■ Drive letters that are not in command lines are presented in uppercase type as shown here: drive A.

■ Directory names that are not in command lines are presented in uppercase type as shown here: DIRECTORY.

■ The file names are presented in uppercase italic type as shown here: *FILENAME*.

■ The names of commands are presented in lowercase as shown here: install, or a:\install.

■ Commands that are to be entered at the system prompt may be shown on a separate line.

■ When you need to type information without pressing **Enter,** you are directed to "type" the information.

■ When you need to type information *and* press **Enter,** you are directed to "enter" the information.

# Technician Note

⚠ **WARNING:** Only authorized technicians trained by Compaq should attempt to repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module-level repair. Because of the complexity of the individual boards and subassemblies, no one should attempt to make repairs at the component level or to make modifications to any printed wiring board. Improper repairs can create a safety hazard. Any indication of component replacement or printed wiring board modifications may void any warranty or exchange allowances.

⚠ **CAUTION:** To properly ventilate the computer system, you must provide at least 3-inches (7.62-cm) of clearance on the front and back of the computer.

⚠ **WARNING:** The computer is designed to be electrically grounded. To ensure proper operation, plug the AC power cord into a properly grounded electrical outlet only.

# System Serial Number

The serial number is displayed on the right side of the cover on the right front corner, and above the expansion board area on the rear of the computer.

# Locating Additional Information

The following documentation is available to support the computer:

- Compaq Reference Guide
- Compaq QuickFind, a subscription reference service
- Compaq Safety & Comfort Guide
- Compaq Service Advisories and Bulletins
- Compaq Service Quick Reference Guide
- Compaq Technical Reference Guide
- Illustrated Parts Map (poster)
- Technical Training Guides

*chapter* $1$

# PRODUCT DESCRIPTION

This chapter describes the model offerings and features of the Compaq Deskpro 1000 Series of Personal Computers.



**Figure 1-1.** *Compaq Deskpro 1000 Series of Personal Computers*

## 1.1     Compaq Deskpro 1000 Series of Personal Computer Models

The Compaq Deskpro 1000 Series of Personal Computers is available in desktop configurations described in the following sections.

**Table 1-1**
**Desktop Models**

| Configuration Code | Processor | Hard Drive | Memory | Internal Cache | Graphics |
|---|---|---|---|---|---|
| BWF1 | P55C/166 | 1.6 GB | 16 MB | 256 KB | S3 Trio64V2/DX |
| BWF2 | P55C/200 | 1.6 GB | 16 MB | 256 KB | S3 Trio64V2/DX |

✎    All models have maximum expandable memory up to 256 MB.

## 1.2    Features

**Table 1-2**
**Features**

| Item | Description |
| --- | --- |
| **Processor**<br>    Speed (MHz) | Intel Pentium Processor with MMX Technology<br>166<br>200 |
| **Cache**<br>    L2 (KB), (write-through, direct mapped) | 256 |
| **Architecture**<br>    CMOS RAM, battery backed<br>    Plug and Play capability | PCI/ISA<br>242-byte<br>Standard |
| **Chipset** | VIA Apollo 590VP |
| **ROM BIOS** | Flash memory device |
| **Memory**<br>SIMM, 72-pin, non-parity, 66 MHz, EDO<br>(SIMMs or DIMMs standard but not both)<br>    Base (MB)<br>    Maximum (MB)<br>    SIMM sockets | <br><br><br>16<br>256<br>4 |
| **Memory**<br>DIMM, 168-pin, non-parity, 66 MHz, SDRAM,<br>(SIMMs or DIMMs standard but not both)<br>    Base (MB)<br>    Maximum (MB)<br>    DIMM sockets | <br><br><br>16<br>256<br>2 |
| **Bays**<br>    3.5-inch Internal<br>    3.5-inch External<br>    5.25-inch External | <br>2<br>1<br>2 |
| **Diskette drive**<br>    Standard 3.5-inch drive bay (MB) | 1.44 |
| **Hard drive**<br>    Standard EIDE with drive fault prediction (GB) | 1.6 |
| **Expansion slots**<br>    PCI/ISA/combination | 3/3/1 |
| **Graphics**<br>    S3 Trio64V2/DX Enhanced 64-bit<br>    Graphics (MB) | 1 |
| **I/O ports**<br>Standard | Serial (2)<br>Parallel<br>USB (2)<br>Monitor<br>Keyboard<br>Mouse |

*continued*

**Table 1-2** *continued*

| Item | Description |
| --- | --- |
| **Power supply** | 200 watt, 115 VAC, 6.0 A/230 VAC, 3.0 A |
| **Power supply fan** | Standard |
| **Internal piezo speaker** | Standard |
| **Internal battery** | Standard |
| **Operating System** | Windows 95 |
| **Two-button mouse** | Standard |
| **Compaq Enhanced keyboard** with MS Windows-specific keys | Standard |

# 1.3 System Design

This section presents a design overview and functional descriptions of the key components of the Compaq Deskpro 1000 Series of Personal Computers. All replaceable components are identified in Chapter 3, and removal/replacement instructions are presented in Chapter 5.

## 1.3.1 Design Overview

The desktop models of the Compaq Deskpro Series of Personal Computers use a conventional ATX chassis to house the removable system board, expansion boards, power supply, and mass storage devices.

All internal components are accessible when the cover—held in place by three screws—is removed. The front bezel is a separate assembly and is attached to the chassis with release latches.

The system board is easily removed from the chassis after the cover is removed. Details of the disassembly procedure are found in Chapter 5, "Removal and Replacement Procedures."

A removable 3.5-inch drive cage is located to the left center of the chassis. This drive cage can be pulled out from the top, after removing the two screws securing it to the chassis, to provide access to cable connections and to the screws securing the drives to the drive cage. The removable drive cage accommodates one external diskette drive and two internal hard drives. The fixed 5.25-inch drive cage is located to the right of the removable cage and holds a maximum of two drives.

Both the removable and the fixed drive cages allow drive installation without the use of rails. Four screws secure a drive to the drive cage, and ensure proper alignment of the drive within the cage.

Expansion boards are installed vertically into the system board. A single screw secures each expansion board to the chassis.

The power supply is mounted in the right rear corner of the chassis. The power supply is held in place by four screws that are installed through the rear panel of the chassis and a single retaining screw on the inside on the chassis.

## 1.4　Preloaded Software

This computer is shipped with Windows 95 installed as the operating system.

The following software is preloaded on the computer:

■　Compaq Online Safety & Comfort Guide

■　Microsoft Windows 95

## 1.5　Computer Features

### 1.5.1　Front Panel Controls and LEDs
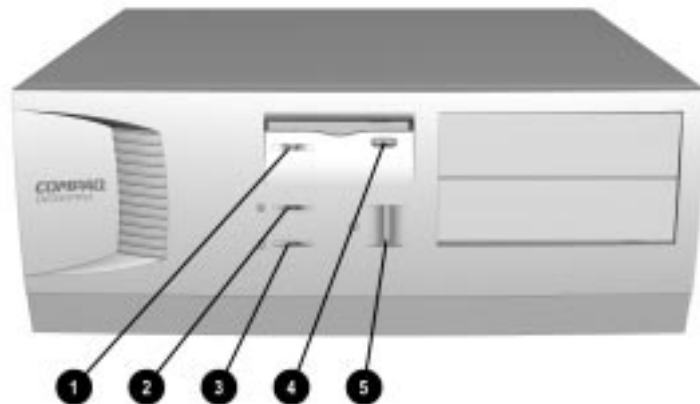


*Figure 1-2.* Front Panel Controls and LEDs

❶　Diskette Drive Activity Light　　Turns on when the diskette drive is reading or writing.

❷　Power-On Light　　Turns on when the computer is turned on.

❸　Hard Drive Activity Light　　Turns on when the hard drive is reading or writing.

❹　Diskette Eject Button　　Ejects a loaded diskette.

❺　Power Button　　Turns the computer on and off.

When the hard drive light ❸ or diskette drive light ❶ is on, the drive is either reading information from the disk or storing information on the disk.

## 1.5.2 Drive Positions
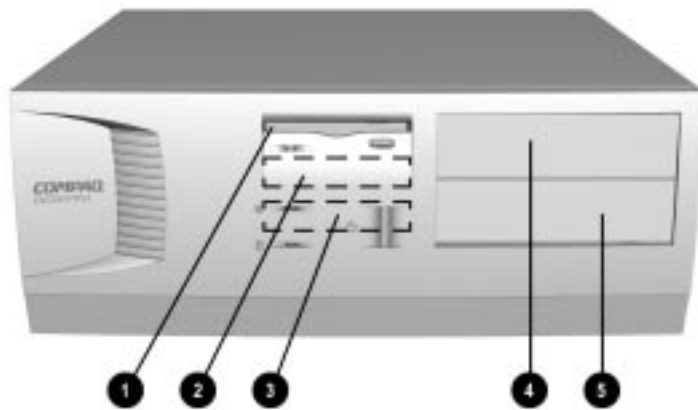


***Figure1-3.*** *Drive Positions on the Compaq Deskpro 1000 Desktop Computer*

❶ One 3.5-inch 1.44-MB diskette drive

❷ One 3.5-inch third-height drive bay for optional drive

❸ One 3.5-inch third-height drive bay for primary hard drive

❹ One 5.25-inch half-height drive bay for optional drive

❺ One 5.25-inch half-height drive bay for optional drive

## 1.5.3    Rear Panel Connectors
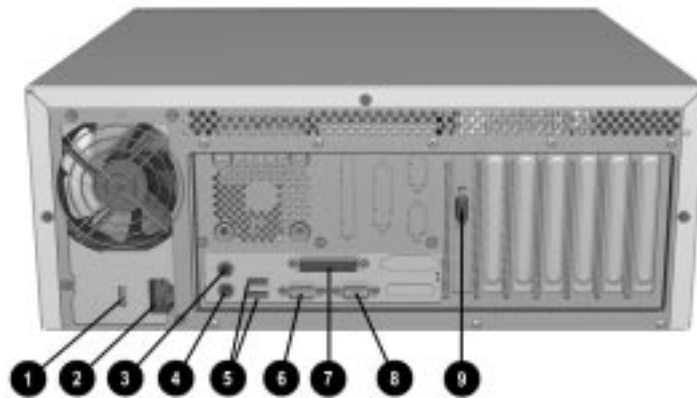


***Figure 1-4.*** *Rear Panel Connectors*

❶  Voltage Select Switch (115 V U.S. or 230 V to match geographical requirements)

❷  Power Cord Connection

❸  Mouse Connector

❹  Keyboard Connector

❺  Universal Serial Bus (USB) Connectors

❻  Serial Connector

❼  Parallel Port Connector

❽  Serial Connector

❾  Monitor Connector

## 1.6 Enhanced Keyboard
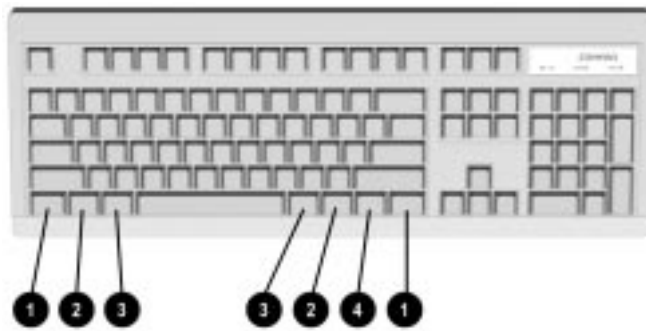


*Figure 1-5.* *Enhanced Keyboard*

| | | |
|---|---|---|
| ❶ | Ctrl | Used in combination with another key. Its effect depends on the software application you are using. |
| ❷ | Windows Logo Keys | Opens the Windows Start menu. Used in combination with another key. Its effect depends on the software application you are using. |
| ❸ | Alt | Used in combination with another key. Its effect depends on the software application you are using. |
| ❹ | Windows Application Key | Used (like the right mouse button) to open pop-up menus in a Microsoft Office application. May perform other functions in other software applications. |

The keyboard has feet on the bottom that enable the user to tilt the keyboard to a more comfortable typing angle.
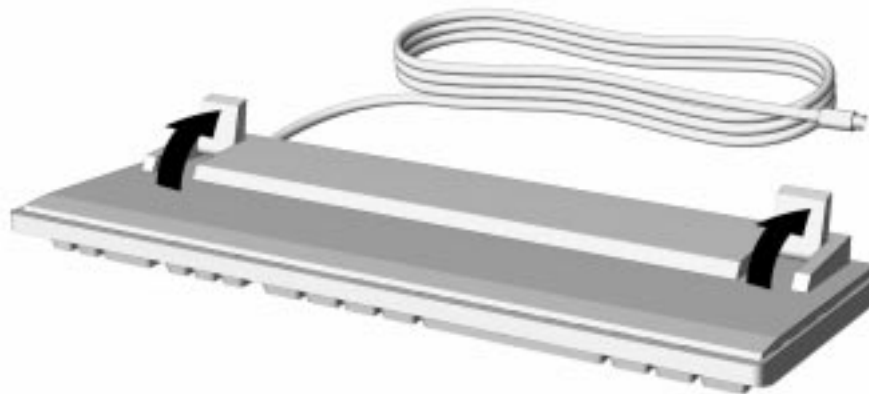


*Figure 1-6.* *Keyboard Tilt Feet*

## *chapter* 2

# TROUBLESHOOTING

This chapter provides troubleshooting information for the Compaq Deskpro 1000 Series of Personal Computers including:

■ **Power-On Self Test (POST)**—POST messages listed in Table 2-1 include a description of the error, the probable cause, and the recommended action that should be taken to resolve the error condition.

■ **CMOS Setup Utility**—Computer Setup options are available through the CMOS Setup Utility.

■ **Troubleshooting Without Diagnostics**—Tables 2-2 through 2-9 include a problem/solution checklist for power, diskette drive, display, printer, hard drive, CD-ROM, and memory.

Adherence to the procedures and precautions described in this chapter is essential for proper service.

✎ Some features may not be available on all models.

## 2.1 Power-On Self Test (POST)

The POST procedure is embedded in the system BIOS and performs a series of diagnostic tests that automatically run when the system is turned on. POST checks the following assemblies to ensure that the computer system is functioning properly:

■ Keyboard

■ Mouse

■ System board

■ Memory modules

■ Video

■ Diskette drives

■ Hard drives

■ Power supply

■ Controllers

If POST detects an error in the system, an error condition is indicated by an audible and/or visual message. Table 2-1 explains the error codes and suggests a recommended course of action.

### 2.1.1 POST Error Messages

An error message may be followed by a prompt to press F1 to continue or press DEL to enter Setup.

**Table 2-1**
**Power-On Self-Test Messages**

| Message | Probable Cause | Recommended Action |
|---|---|---|
| The computer beeps: the beep consists of continuous long beeps | No system memory is present. | Add system memory. |
| The computer beeps: the beep consists of one long beep followed by two short beeps | A video error has occurred and the BIOS cannot initialize the video screen to display any additional information. | Ensure the VGA card is installed correctly and that the monitor cable is well connected. |
| BIOS ROM Checksum Error - System Halted | The checksum of the BIOS code in the BIOS chip is incorrect, indicating the BIOS code may have become corrupt. | Replace the BIOS. |
| CMOS Battery Failed | CMOS battery is no longer functional. | Replace the battery. |
| CMOS Checksum Error - Defaults Loaded | The checksum of CMOS is incorrect, so the system loads the default equipment configuration. | A checksum error may indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary. |
| CPU at nnnn | Displays the running speed of the CPU. | None. |
| Display Switch Is Set Incorrectly | The display switch on the system board can be set to either monochrome or color. This message indicates the switch is set to a different setting than indicated in Setup. | Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the Video selection. |
| Press Esc to Skip Memory Test | The system is testing memory. | The user may press Esc to skip the full memory test. |
| Floppy Disk(s) Fail | Cannot find or initialize the floppy drive controller or the drive. | Ensure the controller is installed correctly. If no diskette drives are installed, be sure the Diskette Drive selection in Setup is set to None. |
| Hard Disk Install Failure | Cannot find or initialize the hard drive controller or the drive. | This will occur only if the BIOS supports low level format. Current BIOS does not support low-level format. |

*Continued*

**Table 2.1** *Continued*

| Message | Probable Cause | Recommended Action |
| --- | --- | --- |
| Hard Disk(s) Diagnosis Failure | The system has run specific disk diagnostic routines. This message appears if one or more hard disks return an error when the diagnostics run. | Hard disk may be damaged, and may need to be replaced. |
| Keyboard Error or No Keyboard Present | Cannot initialize the keyboard. | Ensure the keyboard is attached correctly and no keys are pressed during POST. To purposely configure the system without a keyboard, set the error halt condition in Setup to Halt on All but Keyboard. The BIOS then ignores the missing keyboard during POST. |
| Keyboard is Locked Out - Unlock the Key | This message usually indicates that one or more keys have been pressed during the keyboard tests. | Ensure no objects are resting on the keyboard. |
| Memory Test | This message displays during a full memory test, counting down the memory areas being tested. | None. |
| Memory Test Fail | If POST detects an error during memory testing, additional information appears giving specifics about the type and location of the memory error. | If this happens often, the memory module may need to be replaced. |
| Primary Master Hard Disk Fail | POST detects an error in the primary master IDE hard drive. | Ensure the controller is installed correctly, the cable is attached correctly, and the hard disk jumper is set to primary master. If no hard drive is installed, be sure the hard drive selection in Setup is set to None. |
| Primary Slave Hard Disk Fail | POST detects an error in the primary slave IDE hard drive. | Ensure the controller is installed correctly, the cable is attached correctly, and the hard disk jumper is set to primary slave. If no hard drive is installed, be sure the hard drive selection in Setup is set to None. |
| Secondary Master Hard Disk Fail | POST detects an error in the secondary master IDE hard drive. | Ensure the controller is installed correctly, the cable is attached correctly, and the hard disk jumper is set to secondary master. If no hard drive is installed, be sure the hard drive selection in Setup is set to None. |
| Secondary Slave Hard Disk Fail | POST detects an error in the secondary slave IDE hard drive. | Ensure the controller is installed correctly, the cable is attached correctly, and the hard disk jumper is set to secondary slave. If no hard drive is installed, be sure the hard drive selection in Setup is set to None. |

## 2.2    CMOS Setup Utility

The Award BIOS chip contains the ROM setup information of your computer and serves as an interface between the processor and the rest of the components on the motherboard.

The CMOS Setup Utility, which is built into the BIOS and stored in the CMOS RAM, is executed when the user changes the battery or the existing settings, or when the system detects an error during POST and asks you to run the Setup utility. See Chapter 7, "Utilities," for instructions on how to use this utility.

✎    Before removing or replacing a subassembly, safeguard the CMOS settings. Write them down, make a print screen of each CMOS setup page, or use a third-party CMOS rescue software to store the settings in a file on a write-protected diskette.

To execute the CMOS Setup Utility:

1.  Shut down the operating system.
2.  Turn the computer off, then on.
3.  Press the **Delete** key when the message "Press DEL to enter Setup" appears on the lower right hand corner of the screen.
4.  Use the arrow keys to highlight the setup feature you want to change.
5.  Press **Enter** to open the selected setup feature.
6.  Use the arrow keys to highlight the value you want to change.
7.  Use the **Page Up** or **Page Down** keys to change the selected value.
8.  Follow the on-screen instructions to save the changes and exit, or to exit the utility without saving any changes.

✎    Failure to configure the system correctly can result in loss of data and reduced hard drive capacity.

The CMOS Setup Utility includes the following options:

- ■ Standard CMOS Setup
- ■ BIOS Features Setup
- ■ Chipset Features Setup
- ■ Power Management Setup
- ■ PnP/PCI Configuration Setup
- ■ Load BIOS Defaults
- ■ Load Setup Defaults
- ■ Integrated Peripherals
- ■ Supervisor Password
- ■ User Password
- ■ IDE HDD Auto Detection
- ■ Save and Exit Setup
- ■ Exit without Saving

### 2.2.1 Preparing the Computer

If you encounter an error condition, complete the following steps before starting problem isolation procedures:

1. Ensure proper ventilation. The computer should have a 3-inch (7.6-cm) clearance at the back of the system unit.

2. Turn off the computer and peripheral devices.

> △ **CAUTION:** Always ensure that the power is off before disconnecting or reconnecting the mouse, keyboard, or any other peripheral devices. Disconnecting or connecting any peripheral devices while the unit power is on can damage the system board.

3. Disconnect any peripheral devices other than the monitor and keyboard. Do not disconnect the printer if you want to test it or use it to log error messages.

4. Install loop-back and terminating plugs for complete testing.

5. Run a diagnostics utility.

### 2.2.2 Clearing the Password

If you have to clear the password before changing any of the CMOS settings, refer to Chapter 7, "Utilities," for instructions.

## 2.3 Troubleshooting Without Diagnostics

This section describes some simple, preliminary tests and guidelines for troubleshooting the computer without using diagnostics software.

> ✎ Diagnostics software is not included with this computer. Compaq diagnostics software, Version PC 10.25A, is available at www.compaq.com. Third-party diagnostics software is also available.

### 2.3.1 Checklist for Solving Minor Problems

If you encounter some minor problem with the computer or a software application, go through the following checklist for possible solutions before running any of the diagnostic utilities:

- Is the computer connected to a working power outlet?

- Is the computer turned on and the power light illuminated?

- Are all cables connected properly and seated?

- Is the monitor turned on and the power light illuminated?

- If the monitor is dim, turn up the brightness and contrast controls of the monitor.

- Press and hold any key. If the system beeps, then the keyboard should be operating correctly.

- Are all of the necessary device drivers installed?

- Have all printer drivers been installed for each application?

- Is the *CONFIG.SYS* file correct?

- Is the *AUTOEXEC.BAT* file (MS-DOS) or *STARTUP.CMD* file (OS/2) correct?

- Was a nonbootable diskette loaded in the diskette drive at power-up?
- Are all switch settings correct?
- Have all jumper settings been set as instructed by the configuration utility?
- Was Computer Setup run after installing options (memory, disk drives, expansion boards, etc.) and before installing industry standard architecture (ISA) boards?

## 2.3.2    Power Problems

This section identifies some quick checks for power-related problems.

**Table 2-2**
**Solutions for Power Problems**

| Problem | Possible Solution |
|---------|-------------------|
| Computer will not turn on. | Ensure that the computer is connected to a power source. |
|  | Cables to the external power source may be unplugged. Ensure that cables connecting the computer and the external source are plugged in properly. |
|  | A PCI or ISA card that has been installed may be defective. Remove any adapter card that was just installed. |
| Computer does not automatically display the date and time. (Date/Time not set) | The real-time clock (RTC) battery may need to be replaced. See Chapter 5 for replacement procedures. |
| Computer powered off automatically. | The unit temperature may have been exceeded. Check the fan for function and blockage. |
|  | Check to ensure that the power cord is securely plugged into the wall and the unit. |

## 2.3.3    Diskette Drive Problems

This section identifies some quick checks for diskette drive–related problems.

### Table 2-3
### Solutions for Diskette Drive Problems

| Problem | Possible Solution |
| --- | --- |
| Diskette drive light stays on. | 1. Diskette may be damaged. In Windows 95, run SCANDISK. At the Start menu, highlight Programs, select Accessories, select System Tools, then SCANDISK. |
| | 2. Diskette could be installed incorrectly. Remove the diskette and reinsert. |
| | 3. Software program may be damaged. Replace the program diskettes. |
| | 4. Drive cable is not properly connected. Reconnect drive cable. |
| Diskette drive cannot write to a diskette. | 1. Diskette is not formatted. Format the diskette. |
| | 2. Diskette is write-protected. Either use another diskette that is not write-protected or disable the write protection on the diskette. |
| | 3. Writing to the wrong drive. Check the drive letter in the path statement. |
| | 4. Not enough space is left on the diskette. Use another diskette to write the information. |
| | 5. Diskette write control is disabled. Check the security feature settings in Setup. |
| Diskette drive cannot read a diskette. | 1. Diskette is not formatted. Format the diskette. |
| | 2. Using the wrong diskette type for the drive type. Use a diskette that is compatible with the drive. |
| | 3. Reading the wrong drive. Check the drive letter in the path statement. |
| | 4. Diskette drive has been disabled by Computer Setup. Run Computer Setup and enable the diskette drive. |
| A problem has occurred with a disk transaction | The directory structure is bad, or there is a problem with a file. In Windows 95, run SCANDISK. At the Start menu, highlight Programs, select Accessories, select System Tools, then SCANDISK. |
| Nonsystem disk message. | Remove the diskette from the drive and press any key. |
| Drive not found. | Check the cables for loose connections. |

## 2.3.4    Display Problems

This section identifies some quick checks for display-related problems.

**Table 2-4**
**Solutions for Display Problems**

| Problem | Possible Solution |
| --- | --- |
| Screen is blank. | 1. Monitor is not turned on and the monitor light is not on. Turn on the monitor and check that the monitor light is on.<br>2. Screen save has been initiated. Press any key or move the mouse to light the screen.<br>3. Check the cable connection from the monitor to the computer and check the electrical outlet.<br>4. The brightness need adjusting. Adjust the brightness control.<br>5. The energy saver feature has been enabled. Hit any key or type the password.<br>6. The RGB (Red, Green, Blue) input switch on the back of the monitor is incorrectly set. Set the monitor's input switch to 75 ohms and, if there is a sync switch, set it to External.<br>7. If a fixed-sync monitor is used, be sure that the monitor can accept the same sweep rate as the resolution chosen. |
| Graphics colors are wrong. | 1. Ensure that the Red, Green, and Blue BNC cables are connected to the corresponding monitor connectors.<br>2. Be sure the monitor's RGB inputs are set to 75 ohms. |
| Characters are dim. | 1. Adjust the monitor's brightness and contrast controls.<br>2. Check that the video cable is securely connected to the graphics card and monitor.<br>3. Set the RGB switch (and sync options, if available) to 75 ohms, with the sync set to External. Refer to the documentation included with the monitor. |
| Monitor does not function properly when used with the energy saver features. | Monitor without the energy saver feature is being used with energy saver features enabled. Disable the monitor energy saver feature. |
| Blurry display or requested resolution cannot be set. | If the graphics controller was upgraded, the correct display drivers may not be loaded. Install the correct display drivers on the diskette included in the upgrade kit. |
| The picture is broken up; it rolls, jitters, or blinks. | 1. Be sure the monitor cable is securely connected to the computer.<br>2. In a 2-monitor system or if another monitor is in close proximity, be sure the monitors are not interfering with each other's magnetic field by moving them apart. |
| Garbled characters on the screen are mixed with text. | The ANSI.SYS driver is not in the *CONFIG.SYS* file. Add the ANSI.SYS driver to the *CONFIG.SYS* file by adding the following line:<br>DEVICE = C:\CPQDOS\ANSI.SYS |
| Screen goes blank. | A screen blanking utility may be installed or energy saver features are enabled. Press any key or type password. |
| Monitor overheats. | There is not enough ventilation space for proper airflow. Leave at least 3 inches (7.6-cm) of ventilation space. Also, be sure there is nothing on top of the monitor to obstruct air flow. |
| Cursor will not move using the arrow keys on the numeric keypad. | The Num Lock key is on. Press the Num Lock key. The Num Lock light should not be on when you want to use the arrow keys. |

## 2.3.5    Printer Problems

This section identifies some quick checks for printer-related problems.

**Table 2-5**
**Solutions for Printer Problems**

| Problem | Possible Solution |
|---------|-------------------|
| Printer will not print. | 1. Printer is not turned on and online. Turn the printer on and make sure it is online. |
| | 2. The correct printer drivers for the application are not installed. Install the correct printer drivers for the application. |
| | 3. If the computer is on a network, you may not have made the connection to the printer. Make the proper network connections to the printer. |
| Printer will not turn on. | The cables may not be connected properly. Reconnect all cables and check the power cord and electrical outlet. |
| Prints garbled information. | 1. The correct printer drivers for the application are not installed. Install the correct printer drivers for the application. |
| | 2. The cables may not be connected properly. Reconnect all cables. |
| Printer is offline. | The printer may be out of paper. Check the paper tray and refill it if it is empty. Select online. |

## 2.3.6 Hard Drive Problems

This section identifies some quick checks for hard drive–related problems.

**Table 2-6**
**Solutions for Hard Drive Problems**

| Problem | Possible Solution |
|---|---|
| Hard drive error occurs. | Hard disk has bad sectors or has failed. Use a utility to locate and block usage of bad sectors. If necessary, reformat the hard disk. |
| Disk transaction problem. | Either the directory structure is bad or there is a problem with a file. At the C:\> prompt, run SCANDISK to check for problems. If problems exist, run SCANDISK /AUTOFIX to correct the problems. |
| Drive not found. | 1. Cable could be loose. Check cable connections. |
| | 2. The system may not have automatically recognized a newly installed device. If Windows 3.1 is installed, run Computer Setup and identify the new device. If Windows 95 is installed, run Device Manager and identify the device. |
| | 3. If the drive is a secondary drive that has just been installed on the same controller as the primary drive, verify that the jumpers for both drives are set correctly. |
| Nonsystem disk message. | 1. The system is trying to start from a diskette that is not bootable. Remove the diskette from the diskette drive. |
| | 2. The system is trying to start from the hard drive but the hard disk has been damaged. Insert a bootable diskette into the diskette drive and restart the computer with Ctrl+Alt+Del. |
| | 3. Diskette boot has been disabled in Computer Setup. Run Computer Setup and enable diskette boot. |
| Hard drive operation seems slow. | The hard disk files may be fragmented. |
| | At the C:\> prompt, run SCANDISK to check for problems. If problems exist, run SCANDISK /F to correct the problems. If a large number of lost allocation units is found, run the MS-DOS defragmentation program DEFRAG. See the Microsoft Windows & MS-DOS 6.2 User's Guide for more information. |
| | Alternatively, at the C:\> prompt, run SCANDISK to check for problems. If problems exist, run SCANDISK /AUTOFIX to correct the problems. If a large number of lost allocation units is found, run the MS-DOS defragmentation program DEFRAG. Type HELP SCANDISK for more information. |

## 2.3.7    Hardware Installation Problems

This section identifies some quick checks for hardware problems.

**Table 2-7**
**Solutions for Hardware Installation Problems**

| Problem | Possible Solutions |
|---|---|
| A new device is not recognized as part of the computer system. | 1. The Computer Setup utility has not been run to configure the new device. Run the Computer Setup utility. |
| | 2. When the system advised you of changes to the configuration, you did not accept them. Reboot the computer and follow the instructions for accepting the changes. |
| | 3. The system may not have automatically recognized the new device. If Windows 3.1 is installed, run Computer Setup and identify the new device. If Windows 95 is installed, run Device Manager and identify the device. |
| | 4. A Plug and Play board may not automatically configure when added if the default configuration conflicts with other devices. Run Computer Setup (Windows 3.1 installed) or run Device Manager (Windows 95 installed) to deselect the automatic settings for the board and choose a basic configuration that doesn't cause a resource conflict. |
| | 5. The cables for the new external device are loose or the power cables are unplugged. Check all cables. |
| | 6. The power switch for the new external device is not turned on. Turn off the computer, turn on the external device, and then turn the computer on to integrate the new device with the computer. |
| | 7. If the drive is a secondary drive that has just been installed on the same controller as the primary drive, verify that the jumpers for both drives are set correctly. |
| The computer supports Plug and Play, but the hardware configuration settings in Computer Setup do not match the settings in Windows 95 Device Manager. | In Windows 95, onboard serial devices that are assigned to ports other than COM1 or COM2, have their configuration saved statically in CMOS. When the system is rebooted, the ROM configures the device to the static setting; when Windows 95 loads, it configures the device to the configuration set via Device Manager. In such cases, the configuration shown when CMOS Setup is run does not match what was set up via Device Manager. |
| | If these devices must be configured a certain way before Windows 95 loads, then the serial port devices on the system should only be configured to COM1 or COM2 resources. If the system has two serial devices plus a modem, then the first serial device can be COM1 or COM2 or disabled, the modem can be COM1 or COM2 or disabled, and the second serial device can be COM4 or disabled. |

## 2.3.8  CD-ROM Drive Problems

This section identifies some quick checks for CD-ROM drive problems.

### Table 2-8
### CD-ROM Drive Problems

| Problem | Possible Solution |
|---|---|
| Cannot read compact disc. | 1. CD is not properly seated in the drive. Eject the CD, correctly seat it in the drive, then reload. |
| | 2. CD has been loaded upside down. Eject the CD, turn it over, then reload. |
| System will not boot from CD-ROM drive. | 1. The CD-ROM boot is not enabled through the CMOS Setup utility. Run the CMOS Setup utility and set the drive priorities. |
| | 2. Ensure that drive cabling and jumpers are set correctly. To boot a SCSI drive, the drive ID number must be set to 0. |
| Cannot eject compact disc (tray-load unit only). | CD is not properly seated in the drive. Turn off the computer and insert a thin metal rod into the emergency eject hole and push firmly (a straightened paper clip can be used). Slowly pull the tray out from the drive until the tray is fully extended, then remove the CD. |
| CD-ROM device is not detected; driver is not loaded. | CD-ROM drive is not connected properly. Open the computer and check to see that the drive cable is connected properly and the drive jumpers are set correctly. |

✎  Some features may not be available on all models.

## 2.3.9  Memory Problems

This section identifies some quick checks for memory-related problems.

### Table 2-9
### Memory Problems

| Problem | Possible Solution |
|---|---|
| Out of Memory error. | 1. In Windows 95, use the Device Manager to check memory configuration. |
| | 2. The computer has run out of memory to run the application. Check the application documentation to determine the memory requirements. |
| Memory count during POST is wrong. | The memory modules may not be installed correctly. Check that the memory modules have been installed correctly and that mixed EDO and FPM DRAM are in the correct bank, then run the Configuration utility. (If the system contains mixed EDO and FPM DRAMs, the EDO pair is one bank and the FPM pair is another bank.) |
| Insufficient memory error during operation | 1. Too many Terminate and Stay Resident programs (TSRs) are installed. Delete any unnecessary TSRs. |
| | 2. The computer has run out of memory for the application. Check the memory requirements for the application or add more memory to the computer. |

*chapter* 3

# ILLUSTRATED PARTS CATALOG

This chapter provides an illustrated parts breakdown and a reference for spare parts for the Compaq Deskpro 1000 Series of Personal Computers.



**Figure 3-1.** *Compaq Deskpro 1000 Series of Personal Computers*

## 3.1 System Unit
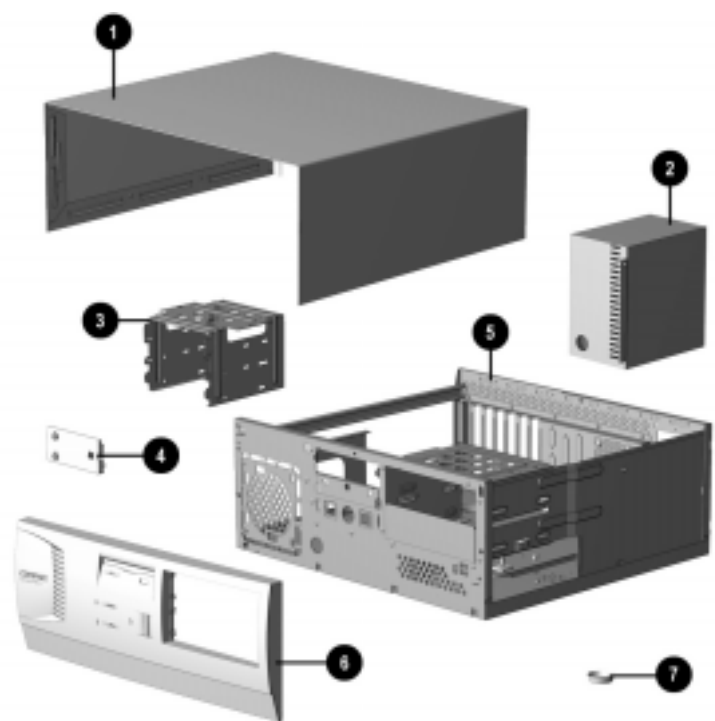


*Figure 3-2.* *System Unit*

**Table 3-1**
**System Unit Spare Parts**

| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| ❶ System unit cover | 333833-001 | A |
| ❷ Power supply, 200W (Includes fan) | 333818-001 | A |
| ❸ Drive Cage | 333838-001 | A |
| ❹ LED holder (reference only; part of Miscellaneous Plastics kit) | | |
| ❺ Base pan (chassis assembly) | 333834-001 | A |
| ❻ Front bezel. (Includes power switch cap and bezel blanks) | 333839-001 | A |
| ❼ Feet (reference only; part of Miscellaneous Plastics kit) | | |

## 3.2 Mass Storage Devices



*Figure 3-3.* Mass Storage Devices

**Table 3-2**
**Mass Storage Devices**

| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| ❶ 3.5-inch, 1.44-MB, diskette drive | 333817-001 | A |
| ❷ 1.6-GB hard drive | 333816-001 | A |

## 3.3    Cables



*Figure 3-4.* *Cables*

**Table 3-3**
**Cables**

| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| Miscellaneous cable kit includes: | 333824-001 | A |
| ❶ Cable, diskette drive | | |
| ❷ Cable, hard drive | | |
| ❸ Cables, LED: hard drive and power | | |
| ❹ Cable, power, APD | 121259-001 | A |
| ❹ Cable, power, EMEA* | 285810-001 | A |
| ❹ Cable, power, ANZ* | 285811-001 | A |
| ❹ Cable, power, LA, Thailand, Taiwan* | 142766-001 | A |
| ❹ Cable, power, PRC* | 298594-AA1 | A |

*Not shown

## 3.4 Standard and Optional Boards
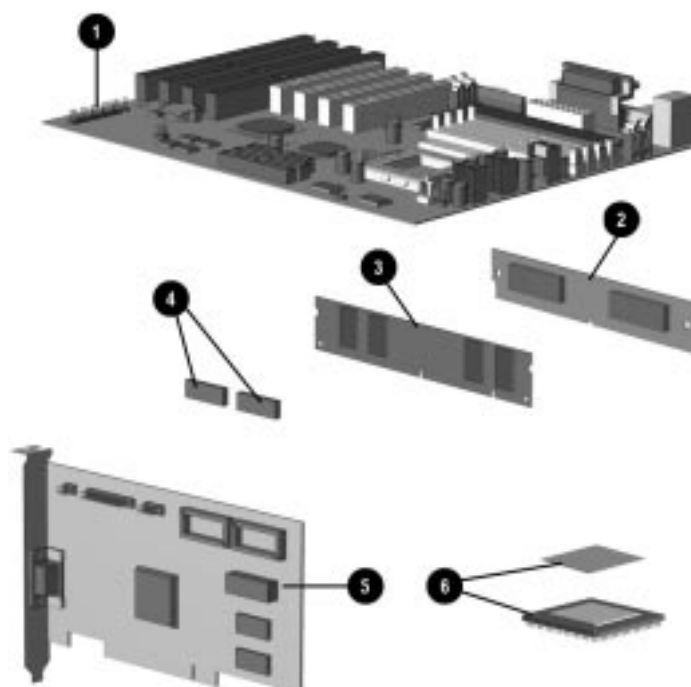


*Figure 3-5. Standard and Optional Boards*

**Table 3-4**
**Standard and Optional Boards**

| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| ❶ System board, P55C | 333814-001 | A |
| ❷ EDO SIMM, 8 MB | 285734-001 | A |
| ❸ SDRAM DIMM, 16 MB | 333820-001 | A |
| ❹. Video upgrade memory, 512 KB | 333822-001 | A |
| ❺ Video board* | 333821-001 | A |
| ❻ Microprocessor, P55C/200 MHz, with thermal pad | 240181-002 | A |
| ❻ Microprocessor, P55C/166 MHz, with thermal pad* | 240181-001 | A |

*Not shown

✎ Video board design varies by model.

## 3.5    Keyboards



**Figure 3-6.** *Keyboard*

**Table 3-5**
**Keyboards**

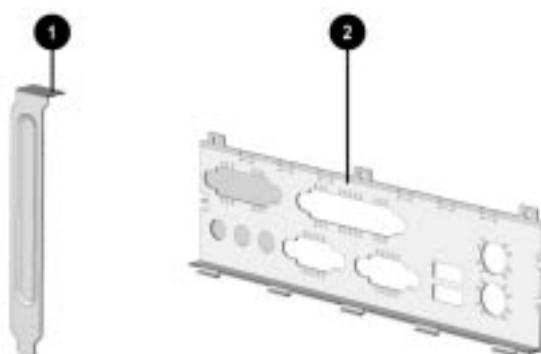| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| 1.  Arabic* | 333828-171 | A |
| 2.  BHCSY (Bosnia-Herzegovina, Croatia, Slovenia, and Yugoslavia)* | 333828-B41 | A |
| 3.  Brazilian Portuguese* | 333828-201 | A |
| 4.  Czech* | 333828-221 | A |
| 5.  French* | 333828-051 | A |
| 6.  Hungarian* | 333828-211 | A |
| 7.  International | 333828-B31 | A |
| 8.  Korean (Hanguel)* | 333828-AD1 | A |
| 9.  LA Spanish* | 333828-161 | A |
| 10. Russian* | 333828-251 | A |
| 11. Slovakian* | 333828-231 | A |
| 12. Taiwanese* | 333828-AB1 | A |
| 13. Thai* | 333828-281 | A |
| 14. Turkish* | 333828-141 | A |

* Not shown

## 3.6 Miscellaneous Hardware Kit



*Figure 3-7.* *Miscellaneous Hardware Kit*

### Table 3-6
### Miscellaneous Hardware Kit

| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| Miscellaneous hardware kit. Includes: | 333832-001 | D |
| ❶ Slot Cover (2 each) | | |
| ❷ I/O Panel | | |
| ❸ M3x0.5P-5mm screws  (25 each)* | | |
| ❹ #6-32UNC ¼-inch hex screws (25 each)* | | |
| ❺ Hex screw locks (25 each)* | | |

\* Not shown

## 3.7 Miscellaneous Plastics Kit
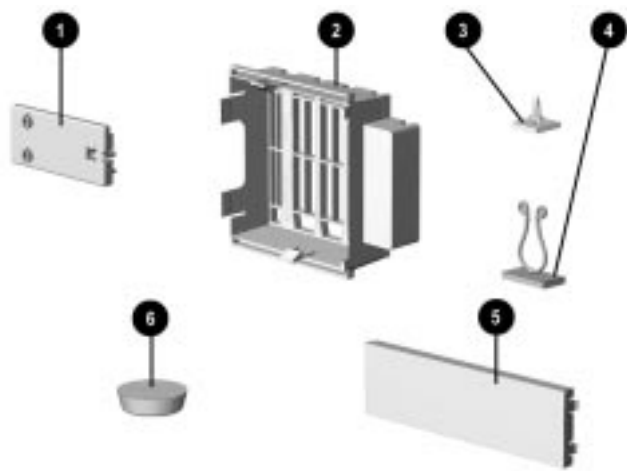


**Figure 3-8.** *Miscellaneous Plastics Kit*

**Table 3-7**
**Miscellaneous Plastics Kit**

| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| Miscellaneous plastics kit, includes: | 333831-001 | D |
| ❶ LED Holder | | |
| ❷ Card guide | | |
| ❸ System board standoff (2 each) | | |
| ❹ Cable twist | | |
| ❺ Bezel blank, 5.25-inch | | |
| ❻ Feet (4 each) | | |

* Not shown

## 3.8  Miscellaneous Parts
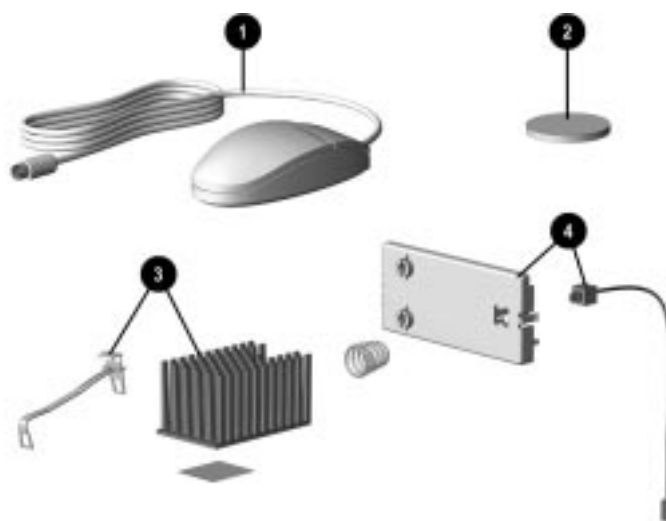


*Figure 3-9.* *Miscellaneous Parts*

**Table 3-8**
**Miscellaneous Parts**

| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| ❶ Two-button mouse | 298792-001 | A |
| ❷ Battery, real-time clock (external) | 234556-001 | A |
| ❸ Active heat sink (P55C/200 with thermal pad and captive clip; replaces passive heat sink) | 333825-001 | A |
| ❹ Power switch (with spring, LED holder, and cable) | 333827-001 | A |

## 3.9  Shipping Boxes

**Table 3-9**
**Shipping Boxes**

| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| Shipping box, with buns (return kit) | 333840-001 | D |

## 3.10  Documentation

**Table 3-10**
**Documentation**

| Description | Spare Part Number | Warranty Tier |
|---|---|---|
| Maintenance & Service Guide | 333835-001 | D |
| Illustrated Parts Map | 333836-001 | D |
| Reference Guide | 333837-001 | D |

# *chapter* 4

# REMOVAL AND REPLACEMENT PRELIMINARIES

This chapter provides general service information for the computer. Adherence to the procedures and precautions described in this chapter is essential for proper service.

## 4.1 Electrostatic Discharge Information

A sudden discharge of static electricity from your finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge (ESD) may not be affected at all and can work perfectly throughout a normal cycle. Or it may function normally for a while, then degrade in the internal layers, reducing its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.

### 4.1.1 Generating Static

Table 4-1 shows how different activities generate static electricity at different electrostatic voltage levels.

**Table 4-1**
**Typical Electrostatic Voltages**

| | Relative Humidity | | |
|---|---|---|---|
| Event | 10% | 40% | 55% |
| Walking across carpet | 35,000 V | 15,000 V | 7,500 V |
| Walking across vinyl floor | 12,000 V | 5,000 V | 3,000 V |
| Motions of bench worker | 6,000 V | 800 V | 400 V |
| Removing DIPs* from plastic tube | 2,000 V | 700 V | 400 V |
| Removing DIPs* from vinyl tray | 11,500 V | 4,000 V | 2,000 V |
| Removing DIPs* from Styrofoam | 14,500 V | 5,000 V | 3,500 V |
| Removing bubble pack from PCB | 26,500 V | 20,000 V | 7,000 V |
| Packing PCBs in foam-lined box | 21,000 V | 11,000 V | 5,000 V |

*Dual Inline Packaging (DIP) is the packaging around individual microcircuitry. These are then multi-packaged inside plastic tubes, trays, or Styrofoam.

✎ 700 volts can degrade a product.

## 4.1.2 Preventing Electrostatic Damage to Equipment

Many electronic components are sensitive to ESD. Circuitry design and structure determine the degree of sensitivity. The following proper packaging and grounding precautions are necessary to prevent damage to electric components and accessories.

■ To avoid hand contact, transport products in static-safe containers such as tubes, bags, or boxes.

■ Protect all electrostatic parts and assemblies with conductive or approved containers or packaging.

■ Keep electrostatic sensitive parts in their containers until they arrive at static-free stations.

■ Place items on a grounded surface before removing them from their container.

■ Always be properly grounded when touching a sensitive component or assembly.

■ Avoid contact with pins, leads, or circuitry.

■ Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

## 4.1.3 Personal Grounding Methods

The method for grounding must include either a wrist strap or a foot strap at a grounded workstation. When seated, wear a wrist strap connected to a grounded system. When standing, use footstraps and a grounded floor mat.

**Table 4-2**
**Static Shielding Protection Levels**

| Method | Voltage |
| --- | --- |
| Antistatic plastic | 1,500 |
| Carbon-loaded plastic | 7,500 |
| Metallized laminate | 15,000 |

### 4.1.4 Grounding Workstations

To prevent static damage at the workstation, use the following precautions:

- Cover the workstation with approved static-dissipative material. Provide a wrist strap connected to the work surface and properly grounded tools and equipment.

- Use static-dissipative mats, foot straps, or air ionizers to give added protection.

- Handle electrostatic sensitive components, parts, and assemblies by the case or PCB laminate. Handle them only at static-free workstations.

- Turn off power and input signals before inserting and removing connectors or test equipment.

- Use fixtures made of static-safe materials when fixtures must directly contact dissipative surfaces.

- Keep work area free of nonconductive materials such as ordinary plastic assembly aids and Styrofoam.

- Use field service tools, such as cutters, screwdrivers, and vacuums, that are conductive.

- Use a portable field service kit with a static-dissipative vinyl pouch that folds out on a work mat. Also, use a wrist strap and a ground cord for the work surface. Ground the cord to the chassis of the equipment undergoing test or repair.

### 4.1.5 Personal Grounding Equipment

Use the following equipment to prevent static electricity damage to equipment:

**Wrist Straps** are flexible straps with a minimum of one-megohm +/- 10% resistance in the ground cords. To provide proper ground, a strap must be worn snug against bare skin. The ground cord must be connected and fit snugly into the banana plug connector on the grounding mat or workstation.

**Heelstraps/Toestraps/Bootstraps** can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use them on both feet with a minimum of one-megohm resistance between the operator and ground. To be effective, the conductive strips must be worn in contact with the skin.

### 4.1.6    Recommended Materials and Equipment

Other materials and equipment that are recommended for use in preventing static electricity include:

- Antistatic tape
- Antistatic smocks, aprons, or sleeve protectors
- Conductive bins and other assembly or soldering aids
- Conductive foam
- Conductive tabletop workstations with ground cord of one-megohm resistance
- Static-dissipative table or floor mats with hard tie to ground
- Field service kits
- Static awareness labels
- Wrist straps and footwear straps providing one-megohm +/- 10% resistance
- Material handling packages
- Conductive plastic bags
- Conductive plastic tubes
- Conductive tote boxes
- Opaque shielding bags
- Transparent metallized shielding bags
- Transparent shielding tubes

## 4.2    Service Considerations

Listed below are some of the considerations that you should keep in mind during the disassembly and assembly of the computer.

### 4.2.1    Tools and Software Requirements

To service the computer, you need the following:

- Phillips-head screwdrivers for use with #0 and #1 screws
- Flat-bladed screwdriver
- Diagnostics software

✎    Diagnostics software is not included with this computer. Compaq diagnostics software, Version PC 10.25A, is available from the Compaq world-wide web site at www.compaq.com. Third-party diagnostics software is also available.

### 4.2.2    Screws

The screws used in the computer are not interchangeable. They may have standard or metric threads and may be of different lengths. If an incorrect screw is used during the reassembly process, it can damage the unit. Compaq strongly recommends that all screws removed during disassembly be kept with the part that was removed, then returned to their proper locations.

✎    As each subassembly is removed from the computer, it should be placed away from the work area to prevent damage.

### 4.2.3    Cables and Connectors

Most cables used throughout the unit are flat, flexible cables. These cables must be handled with extreme care to avoid damage. Apply only the tension required to seat or unseat the cables during insertion or removal from the connector. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing the cables, and ensure that the cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced.

⚠ **CAUTION:** When servicing this computer, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can damage the computer.

### 4.2.4    Hard Drives

Handle hard drives as delicate precision components, avoiding all physical shock and vibration. This applies to failed drives as well as spares.

■ Use only the packaging provided by Compaq for shipping.

■ Do not remove hard drives from the shipping package for storage.

■ Keep hard drives in their protective packaging until they are actually mounted in the CPU or external storage unit.

■ Avoid dropping drives from any height onto any surface.

### 4.2.5    Plastic Parts

Plastic parts can be damaged by the use of excessive force during disassembly and reassembly. When handling the plastic parts, use care. Do not use a screwdriver or similar tool to pry apart the plastic components.

### 4.2.6    Lithium Battery

The battery that came with the computer is replaceable.

⚠ **CAUTION:** Never attempt to remove a lithium battery. You can damage the system board in such an attempt, thereby making it unusable. Do not abuse or disassemble the lithium battery, as it may explode if mistreated.

# *chapter* 5

# REMOVAL AND REPLACEMENT PROCEDURES

This chapter provides subassembly/module level removal and replacement procedures for the Compaq Deskpro 1000 Series of Personal Computers.

Before removing or replacing a subassembly, safeguard the CMOS settings, by writing them down, making a print screen of each CMOS setup page, or using a third-party CMOS rescue software to store the settings in a file on a write-protected diskette.

> ✎ To facilitate reassembly of any part of the computer, note the orientation of each cable connector and the routing of each cable before you disconnect it.

After completing all necessary removal and replacement procedures, run the CMOS Setup Utility to reconfigure the computer. See Chapter 7, "Utilities," for instructions on how to run the CMOS Setup Utility.

## 5.1    Serial Number

The computer serial number should be provided to Compaq whenever requesting information or ordering spare parts. The serial number is located on the system cover at the right front corner, ❶ and also on the rear of the chassis to the left of and above the expansion slot area.



***Figure 5-1.*** *Locating the Serial Number*

# 5.2      Disassembly/Assembly Sequence

| 5.3 | Computer Feet |
| 5.4 | Preparation for Disassembly |

| | 5.5 | System Unit Cover |

| | | 5.6 | Expansion Board |

| | | | 5.7 | Expansion Board Guide |
| | | | 5.8 | System Board |
| | | | 5.9 | Graphics Memory |

| | 5.10.1 | SIMM Module |
| | 5.10.2 | DIMM Module |
| | 5.11 | Power Supply |
| | 5.12 | Microprocessor |
| | 5.13 | Front Bezel |

| | | 5.14 | LED Retainer Assembly |

| | | | 5.15 | LED Cables |

| | | 5.16 | Power Button |
| | | 5.17 | Bezel Blank |

| | 5.18 | Battery |
| | 5.19.2 | Drive Cage |

| | | 5.19.3 | 3.5-Inch Drive |
| | | 5.19.4 | 5.25-Inch Drive |

## 5.3    Feet

Four rubber feet are mounted to the underside of the base pan. No parts have to be removed to access the feet. The replacement feet have an adhesive surface and are shipped with a protective strip in place.

Remove the feet and clean the metal with a clean, dry cloth. Remove the protective strip from the replacement feet before installation.



**Figure 5-2.** *Installing the Feet*

## 5.4    Preparation for Disassembly

1. Remove any diskette, compact disc or tape from the computer.

2. Turn off the computer and any peripheral devices connected to it.

⚠ **CAUTION:** The computer power switch should be turned off before you disconnect any cables.

3. Disconnect the power cord from the electrical outlet and then from the computer.

4. Disconnect all peripheral devices from the computer.

✎ During disassembly, label each cable as you remove it, noting its position and routing.

## 5.5    System Unit Cover

1. Perform preparation procedures (Section 5.4).
2. Remove the three screws on the rear of the computer to release the cover.
3. Slide the computer cover backward about 1 inch (2.5 cm).
4. Lift the cover up, then off the unit.



***Figure 5-3.*** *Removing the System Unit Cover*

To replace the cover, reverse the previous procedure.

## 5.6    Expansion Board

The Compaq Deskpro 1000 Series of Personal Computers contains seven expansion slots:

❶  Three dedicated 32-bit PCI (Peripheral Component Interconnect) expansion slots

❷  One PCI/ISA shared expansion slot

❸  Three dedicated 32-bit ISA (Industry Standard Architecture) expansion slots
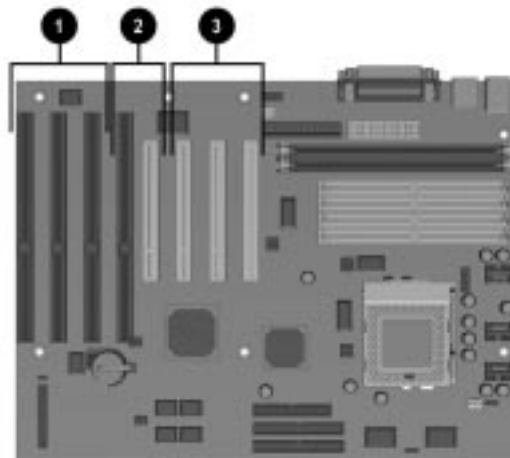


***Figure 5-4.*** *Location of the Slots*

1. Perform preparation procedures (Section 5.4).
2. Remove the system unit cover (Section 5.5).
3. Remove the screw securing the expansion board to the chassis.
4. Pull the board out of the slot.
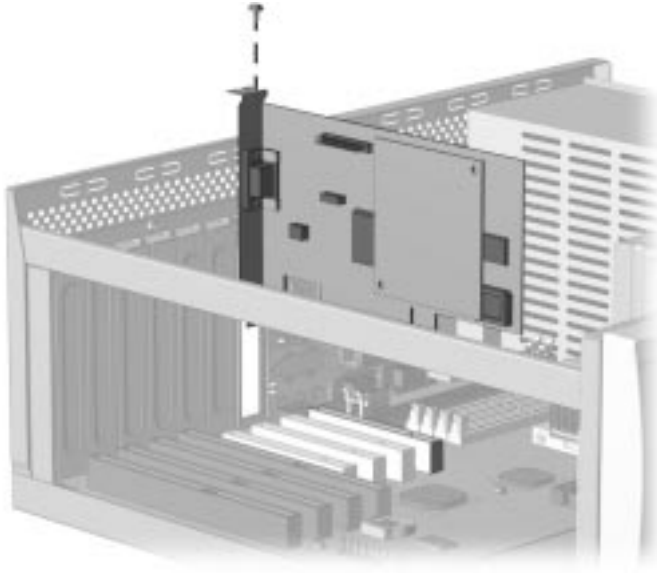


*Figure 5-5.* *Removing a Board*

To replace a board, reverse the previous procedure.

## 5.7     Expansion Board Guide

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Remove all expansion boards from the computer (Section 5.6).

4. Press in on the two plastic clips ❶ on the right side of the guide. The guide will pop out of the chassis.
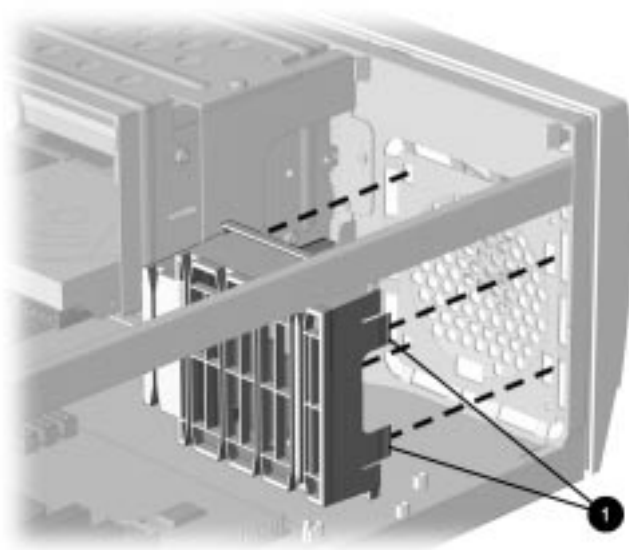


*Figure 5-6.* *Removing the Expansion Board Guide*

To replace the expansion board guide, reverse the previous procedure.

## 5.8    System Board

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Remove all expansion boards (Section 5.6).

4. Disconnect any cables plugged into the system board.

5. Remove the seven screws securing the system board to the chassis.

6. Pinch the two standoff tabs ❶ to release the system board, lifting the board at the same time to remove it from the standoffs.

7. Pull the board forward about one-half inch, then lift it up and out of the chassis.
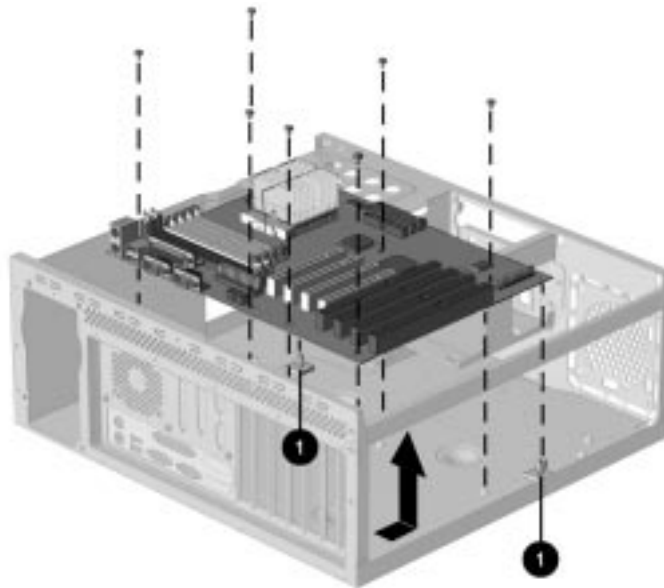


*Figure 5-7.* *Removing the System Board*

To replace the system board, reverse the previous procedure.

## 5.9    Graphics Memory

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Remove the video graphics board and place on a protected surface (Section 5.6).

4. Install the two 512-KB memory upgrade modules, making sure that the modules are firmly seated.

✎    Video card design varies by model.
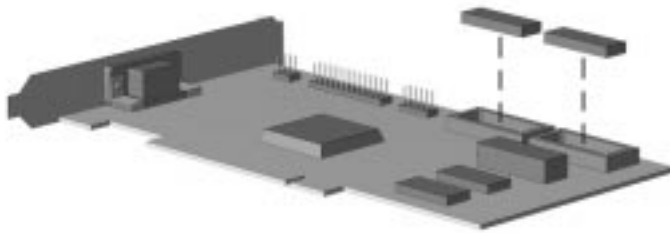


*Figure 5-8.* Installing a Graphics Module

To replace the video graphics board, reverse the previous procedure.

## 5.10    Memory Modules

You can expand computer memory by installing industry-standard single inline memory modules (SIMMs) or dual inline memory modules (DIMMs) on the system board.

The system board includes:

■   Four SIMM sockets that can be populated with Extended Data Output (EDO) or Fast Page Mode (FPM) modules installed in equally matched pairs; for example, two 8-MB modules, two 16-MB modules, or two 32-MB modules.

■   Two DIMM sockets that can be populated with EDO or SDRAM modules either singly or in pairs.
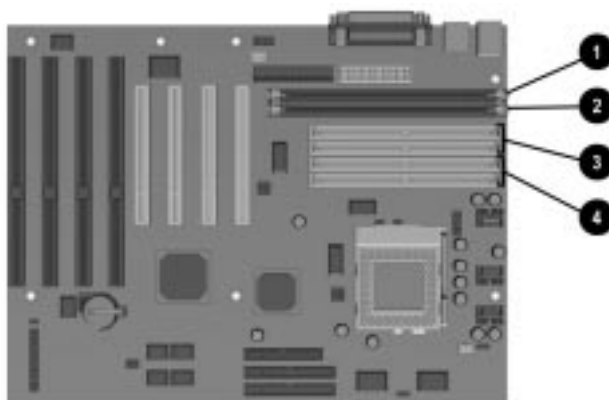


*Figure 5-9.* Memory Module Sockets on the System Board

❶   DIMM 1 (Bank 0)

❷   DIMM 2 (Bank 1)

❸   SIMM 1 & 2 (Bank 0)

❹   SIMM 3 & 4 (Bank 1)

✎   The system board can use either SIMM or DIMM memory, but not both at the same time, and can be populated as shown in the Table 5-2.

**Table 5-1**
**Memory Configuration Options**

| Total System Memory, MB | SIMM 3 & 4 (Bank 1) | SIMM 1 & 2 (Bank 0) | DIMM 1 (Bank 0) | DIMM 2 (Bank 1) |
|---|---|---|---|---|
| 8 | 4 & 4 | | 8 | |
| 16 | 4 & 4 | 4 & 4 | 8 | 8 |
| | 8 & 8 | | 16 | |
| 32 | 8 & 8 | 8 & 8 | 16 | 16 |
| | 16 & 16 | | 32 | |
| 64 | 16 & 16 | 16 & 16 | 32 | 32 |
| | 32 & 32 | | 64 | |
| 128 | 32 & 32 | 32 & 32 | 64 | 64 |
| | 64 & 64 | | | |
| 256 | 64 & 64 | 64 & 64 | 128 | 128 |

## 5.10.1    Installing a SIMM Module

⚠  **CAUTION:** Static electricity can damage the electronic components or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object.

⚠  **CAUTION**: When handling a memory module, be careful not to touch any of the contacts. Doing so may damage the module.

1.  Perform preparation procedures (Section 5.4).

2.  Remove the system unit cover (Section 5.5).

3.  Insert a memory module at a 45-degree angle into a SIMM socket on the system board ❶.

    ✎  A memory module can be installed only one way. Match the notch on the module with the tab on the memory socket. Push the module down into the socket, ensuring that the module is fully inserted and properly seated.
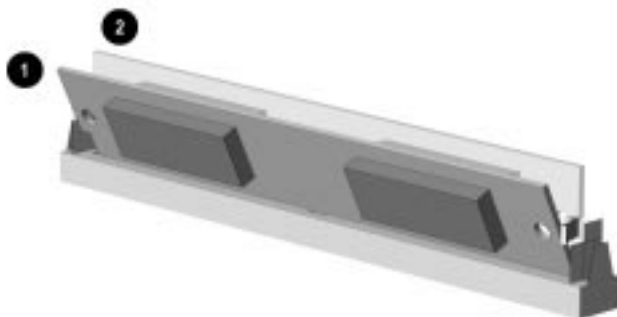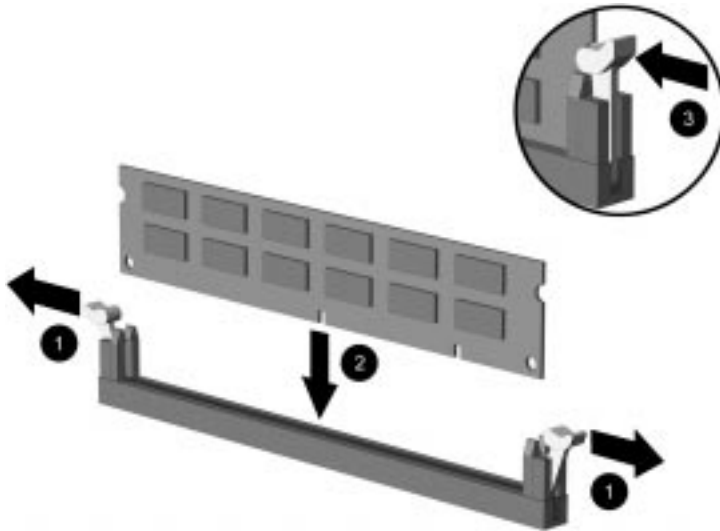
*Figure 5-10  Installing a SIMM Module*

4.  Rotate the module to an upright position, allowing the latches to snap into place ❷.

5.  Repeat steps 3 and 4 for each module that you want to install.

6.  Replace the system unit cover.

7.  Plug in the computer power cord.

8.  Turn on the computer.

    ✎  The computer recognizes system memory upgrades and automatically reconfigures the computer. If, for some reason, the memory upgrades do not configure correctly, run the CMOS Setup Utility to reconfigure the computer. See Chapter 7, "Utilities," for information running the CMOS Setup Utility.

9.  Test the system (optional) using a diagnostics software.

    ✎  Diagnostics software is not included with this computer. Compaq diagnostics software, Version PC 10.25A, is available from the Compaq world-wide web site at www.compaq.com. Third-party diagnostics software is also available.

## 5.10.2 Installing a DIMM Module

⚠ **CAUTION:** Static electricity can damage the electronic components or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object.

⚠ **CAUTION:** When handling a memory module, be careful not to touch any of the contacts. Doing so may damage the module.

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Press outward at the same time on both latches ❶ of the DIMM socket and insert the memory module ❷ into the socket.

   ✎ A memory module can be installed only one way. Match the notch on the module with the tab on the memory socket.

4. Push the module down into the socket, ensuring that the module is fully inserted and properly seated ❸.



*Figure 5-11.* Installing a DIMM Module

5. Replace the system unit cover.

6. Plug in the computer power cord.

7. Turn on the computer.

   ✎ The computer recognizes system memory upgrades and automatically reconfigures the computer. If, for some reason, the memory upgrades do not configure correctly, run the CMOS Setup Utility to reconfigure the computer. See Chapter 7, "Utilities," for information running the CMOS Setup Utility.

8. Test the system (optional) using a diagnostics software.

   ✎ Diagnostics software is not included with this computer. Compaq diagnostics software, Version PC 10.25A, is available from the Compaq world-wide web site at WWW.COMPAQ.COM. Third-party diagnostics software is also available.

## 5.11    Power Supply

1. Perform preparation procedures (Section 5.4).
2. Remove the system unit cover (Section 5.5).
3. Remove the power connector cables from the system board.
4. Disconnect the power cables from the drives.
5. Remove four screws from the power supply on the rear of the chassis.
6. Remove one screw securing the power supply to the inside of the chassis.
7. Lift the power supply up until it hits the lip of the chassis.
8. Slide the power supply towards the front, and lift it out of the chassis.
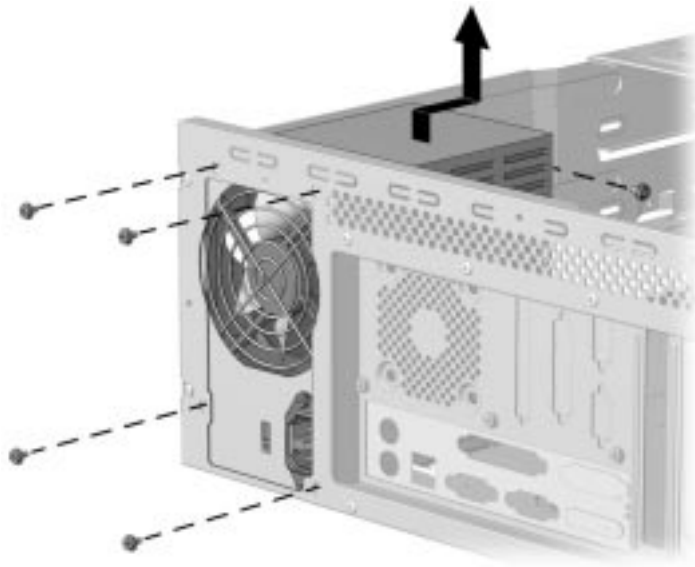
*Figure 5-12.*  *Removing the Power Supply*

To replace the power supply, reverse the previous procedure.

## 5.12 Microprocessor

### 5.12.1 Passive Heat Sink (P55C/166)

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

△ **CAUTION:** When replacing a Pentium processor, you must release the heat sink retaining clip before you pull the ZIF socket handle. This clip engages the processor socket to hold the heat sink in place.

⚠ **WARNING:** To reduce the risk of personal injury from hot surfaces, allow the internal system components to cool before touching.

3. Remove the heat sink retaining clip ❶ by pressing down on the clip until it releases from the safety catch.

4. Lift the heat sink ❷ off the processor.

5. Release the original processor ❹ from the socket by pulling the handle ❺ on the ZIF socket out and upward.

✎ The handle on the ZIF socket in your computer may not look identical to the handle shown in the drawing. All handle types perform the same function.

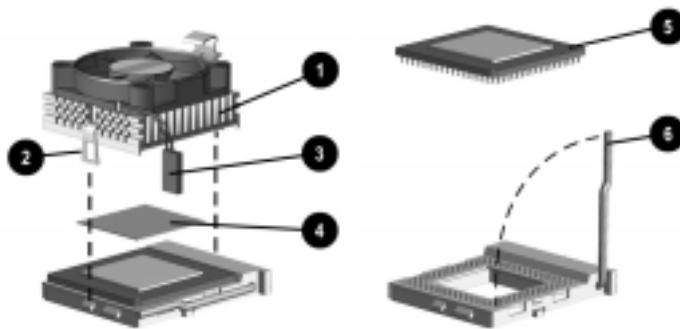6. Lift the processor ❹ out of the socket.
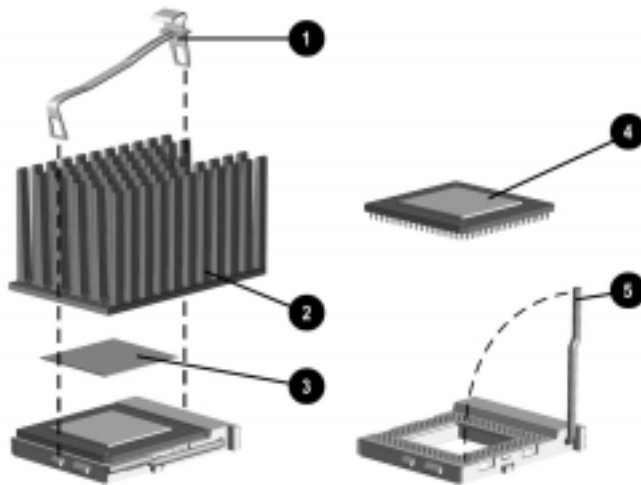


*Figure 5-13. Removing the Microprocessor from the System Board*

△ **CAUTION:** When replacing the processor, be sure that the clipped corner of the processor (location of Pin 1) is aligned with the triangular area of the ZIF socket (hinged corner). Failure to do so could result in burning out both the processor and the system board.

To install a processor, complete the following steps:

1. Lower the processor into the ZIF socket ensuring that pin 1 on the processor lines up with pin 1 on the ZIF socket.

2. Push the handle on the ZIF socket back into place to secure the processor.

3. Replace the heat sink and heat sink retaining clip.

   ✎ Ensure that the new thermal pad ❸ (included in the spares kit) is in place before installing the heat sink.

4. Replace the system unit cover.

5. Plug in the computer power cord.

6. Turn on the computer.

7. Run the CMOS Setup Utility. For information on how to run the utility, see Chapter 7, "Utilities."

## 5.12.2 Active Heat Sink (P55C/200)

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

⚠ **CAUTION:** When replacing a Pentium processor, you must release the heat sink retaining clip before you pull the ZIF socket handle. This clip engages the processor socket to hold the heat sink in place.

⚠ **WARNING:** To reduce the risk of personal injury from hot surfaces, allow the internal system components to cool before touching.

3. Remove the heat sink fan plug ❸ from the socket on the system board.

4. Release the heat sink retaining clips ❷ from the tabs on the ZIF socket.

5. Lift the heat sink ❶ off the ZIF socket.

6. Release the original processor from the socket by pulling the handle ❻ on the ZIF socket out and upward.

   ✎ The handle on the ZIF socket in your computer may not look identical to the handle shown in the drawing. All handle types perform the same function.

6. Lift the processor ❺ out of the socket.



***Figure 5-13.2.*** *Removing the Microprocessor from the System Board*

⚠ **CAUTION:** When replacing the processor, be sure that the clipped corner of the processor (location of Pin 1) is aligned with the triangular area of the ZIF socket (hinged corner). Failure to do so could result in burning out both the processor and the system board.

To install a processor, complete the following steps:

1. Lower the processor into the ZIF socket ensuring that pin 1 on the processor lines up with pin 1 on the ZIF socket.

2. Push the handle on the ZIF socket back into place to secure the processor.

3. Replace the heat sink.

   ✎ Ensure that the new thermal pad ❹ (included in the spares kit) is in place before installing the heat sink.

4. Insert the heat sink fan plug ❸ into the CPU_FAN socket.

5. Replace the system unit cover.

6. Plug in the computer power cord.

7. Turn on the computer.

8. Run the CMOS Setup Utility. For information on how to run the utility, see Chapter 7, "Utilities."

## 5.13    Front Bezel Assembly

To remove the bezel:

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. From the inside the chassis, push the release latches ❶ in and push the top of the bezel out and away from the chassis to release the bezel at those points.

4. Slide the bezel up from the bottom of the chassis to separate it from the chassis.
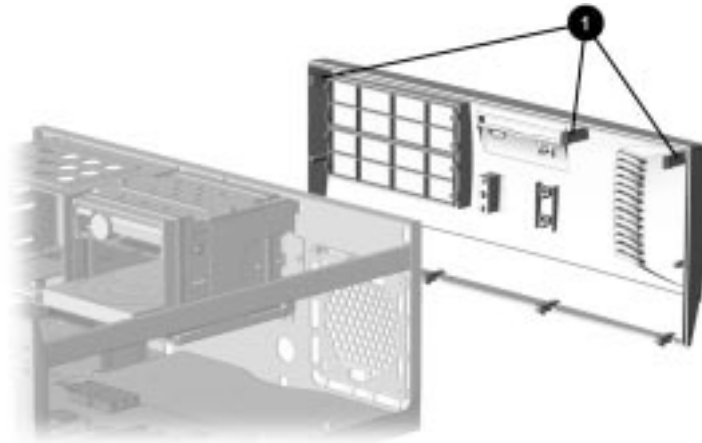


*Figure 5-14.*  *Removing the Front Bezel*

To replace the front bezel, reverse the previous procedure, taking care to properly position the hinge points and the release latches before pushing the bezel back into the chassis.

## 5.14 LED Retainer Assembly

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Remove the front bezel assembly (Section 5.13).

4. From the outside of the chassis, press the tab ❶ on either side of the LED assembly to pop it out of the chassis, then continue to slide the assembly to the left.
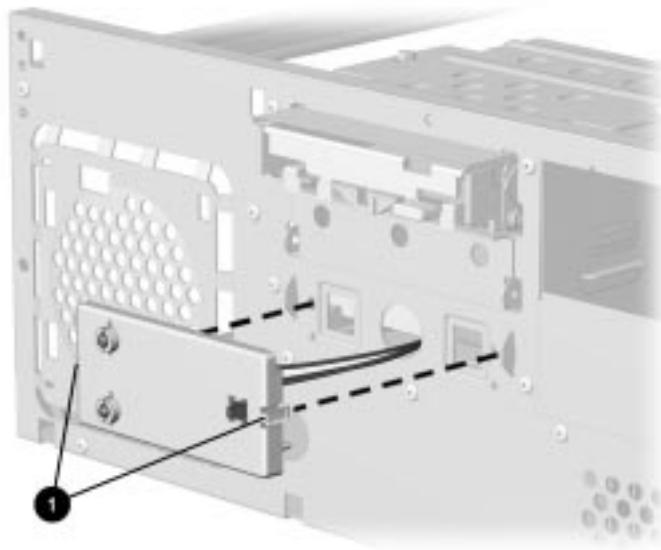


*Figure 5-15.* *Removing the LED Retainer Assembly and Cables*

To install the LED retainer assembly, reverse the previous procedure.

## 5.15 LED Cables

1. Perform preparation procedures (Section 5.4).
2. Remove the system unit cover (Section 5.5).
3. Remove the front bezel assembly (Section 5.13).
4. Disconnect the cables from the system board.
5. Free the cable from the cable twist attached to the floor of the chassis.
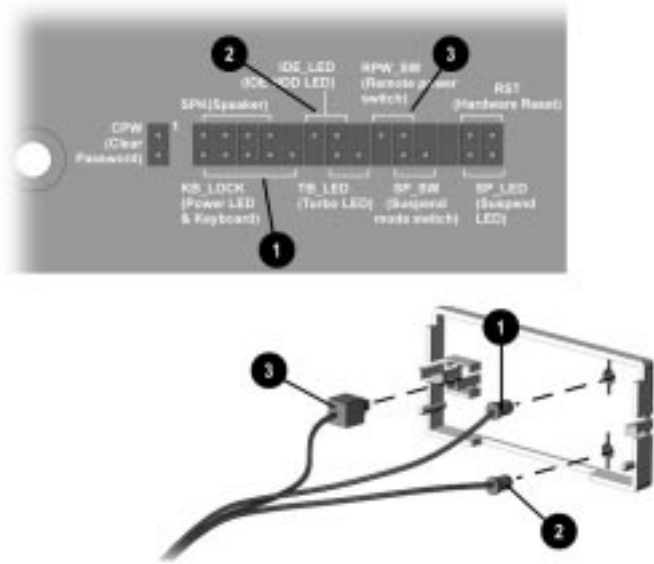


***Figure 5-16.*** *Removing the LED Cables from the System Board*

### Table 5-2
### LED Cables

| Ref. | Component | Cable Color |
|------|-----------|-------------|
| ❶ | Power LED Cable | Green/White |
| ❷ | Hard Drive LED Cable | Yellow/White |
| ❸ | Power Switch Cable | Blue/White |

6. Remove the LED retainer assembly from the chassis (Section 5.14).
7. From the front of the LED retainer assembly, push each green LED toward the rear of the retainer assembly and slide each LED out of its socket.
8. Disconnect the cables attached to the 3.5-inch hard drive and diskette drive in the drive cage.
9. Remove two screws from the top of the drive cage.
10. Slide the drive cage to the rear about one inch allowing the front of the cage to clear the bezel, then lift the cage out of the chassis.
11. From the rear of the LED holder, push the tabs on each side of the power button outward, then pull the switch ❸ out of the socket.

To install the cables, reverse the previous procedure.

✎ When installing the LED's, ensure that LED's are installed as shown.

## 5.16     Power Button

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Remove the front bezel (Section 5.13).

4. From the rear of the front bezel, depress the tabs on each side of the power button; the button with its spring will come out of the front of the bezel.
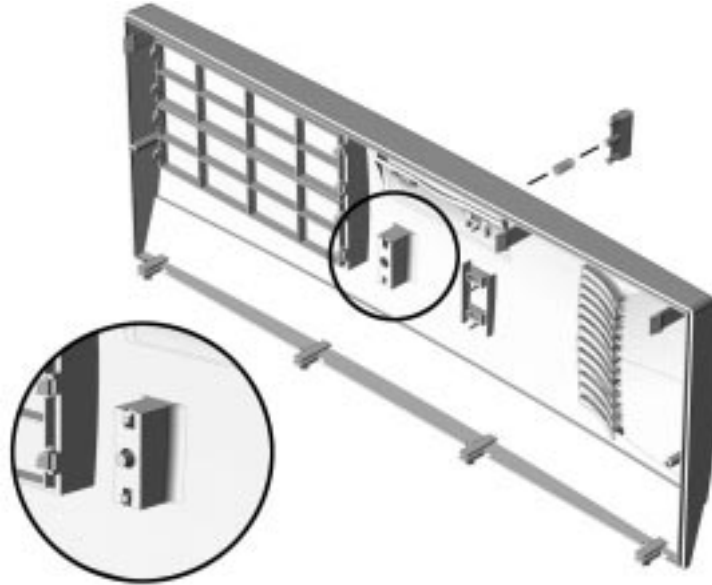


*Figure 5-17.*  *Removing the Power Button*

To replace the power button, reverse the previous procedure.

## 5.17    Bezel Blank

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Remove the front bezel (Section 5.13).

4. With the front bezel in an upright position, press the tabs on the side of the bezel blank towards the center of the blank and push the bezel blank out of the front of the bezel.
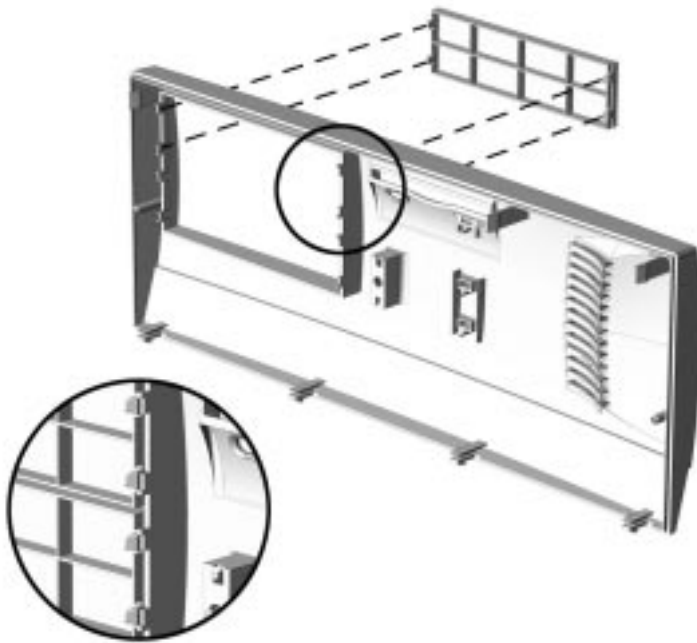


*Figure 5-18.* *Removing the Bezel Blank*

To replace the bezel blank, reverse the previous procedure.

## 5.18    Replacement Battery

The real-time clock battery that came with the computer can be replaced with a Compaq battery or a comparable 12 microamp alkaline, 3.0 volt battery.

✎    It is important to store your CMOS settings before you install a new battery. To safeguard these settings, write them down, make a print screen of each CMOS setup page, or use a third-party CMOS rescue software to store the settings in a file on a write-protected diskette.

1. Perform preparation procedures (Section 5.4).
2. Remove the system unit cover (Section 5.5).

⚠ **WARNING:** The system board contains a clock/CMOS lithium battery. The lithium battery may explode if mistreated. Use only replacement batteries supplied by Compaq Computer Corporation

3. Press down on the retainer latch ❶ and slide the battery out of the holder.
4. Insert new battery into holder.
5. Replace the system unit cover.
6. Plug in the computer and any peripheral devices.

⚠ **WARNING:** This equipment is designed for connection to a grounded (earthed) outlet. The grounding type plug is an important safety feature. To avoid risk of electrical shock or damage to the equipment, do not disable this feature.

7. Turn on the computer.
8. When you see the prompt "Press DEL to enter Setup," press the **Delete** key to run the CMOS Setup Utility to reset the date and time and automatically reconfigure your system.
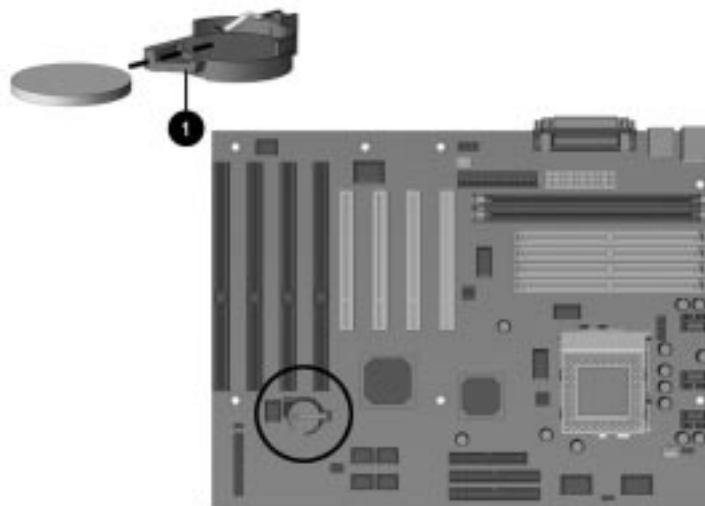


*Figure 5-19.* *Replacing the Battery*

# 5.19　Mass Storage Devices

This section discusses the removal and replacement procedures on the Compaq Deskpro 1000 Series of Personal Computers.

For information on installing an additional hard drive using cable-select technology, refer to Appendix C, "Hard Drives."

## 5.19.1　Drive Positions

The Compaq Deskpro 1000 Series of Personal Computers supports up to five drives, including:

❶ One external 3.5-inch third-height diskette drive

❷ One internal 3.5-inch third-height bay for an optional hard drive

❸ One internal 3.5-inch third-height hard drive

❹ One external 5.25-inch half-height bay for optional drive

❺ One external 5.25-inch half-height bay for optional drive
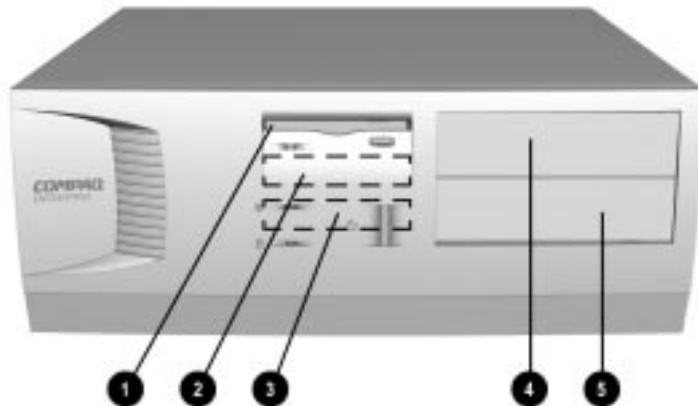


*Figure 5-20.*　*Drive Bay Positions*

## 5.19.2    Drive Cage

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Disconnect the cables attached to the 3.5-inch hard drive and diskette drive in the drive cage.

4. Remove two screws from the top of the drive cage.

5. Slide the drive cage to the rear about one inch allowing the front of the cage to clear the bezel, then lift the cage out of the chassis.
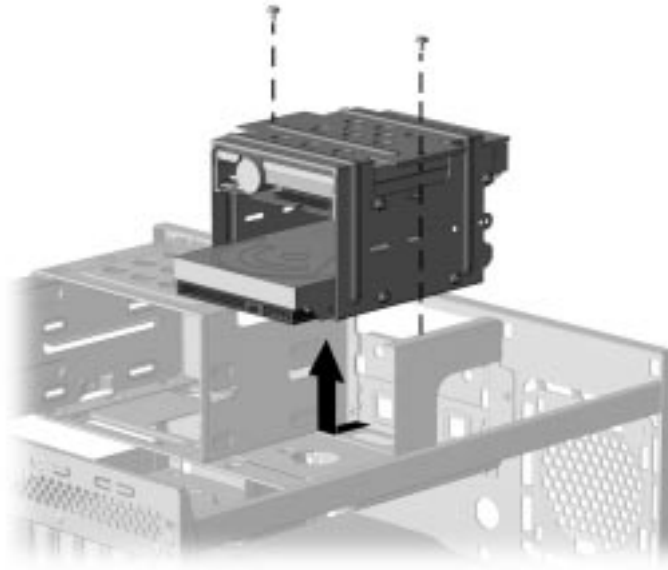


*Figure 5-21.*  *Removing the Drive Cage*

To replace the drive cage, reverse the previous procedure.

### 5.19.3    3.5-Inch Drive

Before beginning the removal procedure, ensure that all removal media have been removed from the drive.

> ⚠ **CAUTION:** When servicing this computer, ensure that the cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the computer.

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Remove the drive cage (Section 5.19.2).

4. Remove the two screws on each side of the drive (four total) that secure the drive in the drive cage.

5. Pull the 3.5-inch drive straight out of the drive cage.
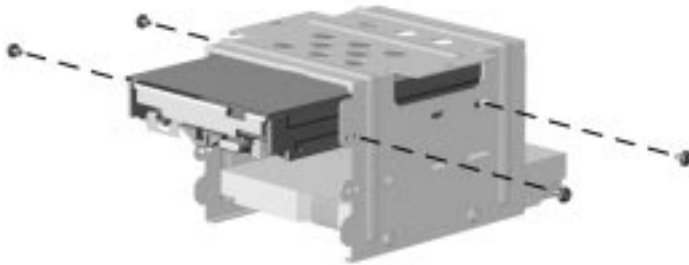
*Figure 5-22.*  *Removing a 3.5-Inch Hard Drive from the Drive Cage*

To replace the 3.5-inch drive, reverse the previous procedure.

## 5.19.4    5.25-Inch Drive

Before installing a 5.25-inch drive into a bay that has never been used, remove the metal breakaway plate covering the 5.25-inch bay. Bend the metal plate back and forth until it breaks free of the chassis.

> △ **CAUTION:** When servicing this computer, ensure that the cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the computer.

1. Perform preparation procedures (Section 5.4).

2. Remove the system unit cover (Section 5.5).

3. Remove the front bezel (Section 5.13).

4. Remove the drive cage (Section 5.19.2).

5. Insert the drive into the 5.25-inch bay from the front and secure it with two screws (four total) on each side of the drive.

6. Connect the cables to the rear of the 5.25-inch drive and the system board.

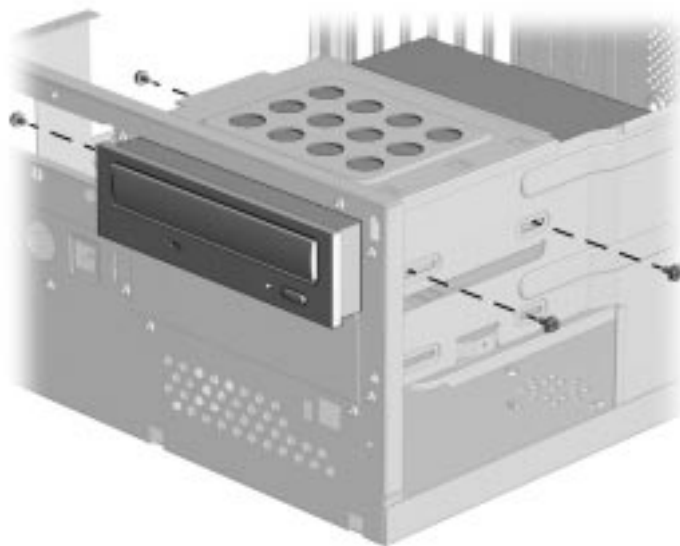7. Reinstall the 3.5-inch drive cage and reconnect the drive cables.



*Figure 5-23.*  *Removing a 5.25-Inch Drive*

To remove the 5.25-inch device, reverse the previous procedure.

# *chapter* 6

# JUMPER INFORMATION

This chapter provides information for system board jumpers and hard drives for the Compaq Deskpro 1000 Series of Personal Computers.

## 6.1   System Board Jumpers

This section provides information for setting jumpers that enable/disable passwords and clear the configuration (CMOS). When you change a security feature, you will need to reset a jumper and reconfigure the computer to recognize this change. If the system configuration is incorrect, your computer may not work properly and you may receive error messages on the screen. Setting the system board jumpers are part of the reconfiguration process, along with running the Computer Setup (CMOS) utility.

✎   To change the system board jumpers, you must remove the computer system unit cover. For procedures on removing the computer system unit cover, refer to Chapter 5, "Removal and Replacement Procedures."

⚠   **CAUTION:**  Be sure to turn off the computer before changing a jumper setting, or damage to the system board can result.

⚠   **WARNING:**  To reduce the risk of personal injury from hot surfaces, allow the internal system components to cool before touching.

Jumpers are used to select the operation modes for your computer. To set a jumper, a black cap containing metal contacts is placed over the jumper pins according to the required configuration. A jumper is shorted when the cap is placed on two of its pins.
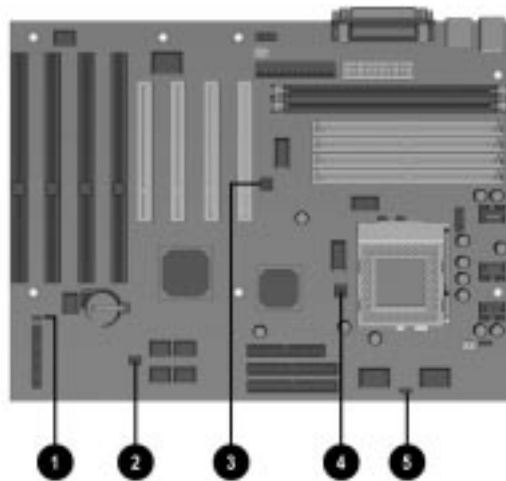
*Figure 6-1.* *Locating the Jumpers*

**Table 6-1**
**System Board Jumpers**

| | System Board ID | Function | Description |
|---|---|---|---|
| ❶ | CPW | Clear Password | Allows you to set the password configuration to enabled or disabled. You may need to enable this jumper if you forget your password. |
| ❷ | EP1, EP2 | Flash EPROM Type Selection | Allows you to configure the Flash EPROM chip. |
| ❸ | CLK1, CLK2, CLK3 | CPU External Clock (BUS) Frequency | Allows you to set the different CPU speed configurations |
| ❹ | FREQ1, FREQ2, FREQ3 | CPU to Bus Frequency Ratio | Used in conjunction with CLK1, CLK2, and CLK3 to decide the ratio of the internal frequency of the CPU to the bus clock. |
| ❺ | SRAM | CPU to SRAM Data Transacting Mode Selection | Allows you to select the CPU to SRAM data read/write mode. |

### 6.1.1 Power-On Password Jumpers (CPW)

If you forget your password, you cannot access the computer. You will need to disable the User Password feature by setting the appropriate jumper on the system board. You will then be able to access your computer.

1. Turn off the computer and any external devices.
2. Disconnect the power cord from the power outlet and any external devices from the computer.
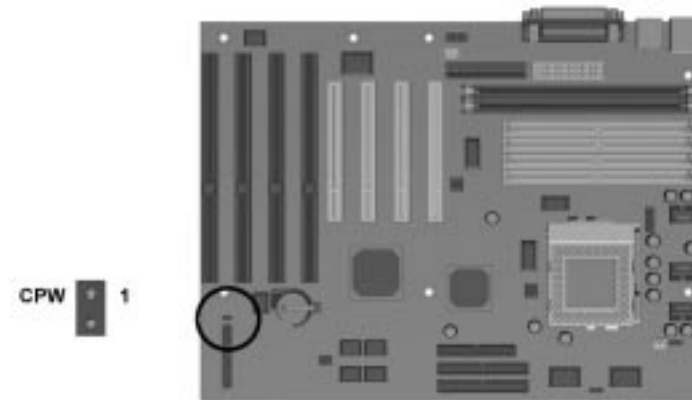3. Remove the computer cover.
4. Locate Jumper CPW.



**Figure 6-2.** *Locating the Password Jumper on the System Board*

5. Remove the jumper from the single pin and reinstall it over both pins.
6. Leave the jumper on for approximately 60 seconds.
7. Remove the jumper from both pins and reinstall on a single pin.
8. Replace the computer cover.
9. Restart the computer.

## 6.1.2    Flash EPROM Type Selection (EP)

The EP1 and EP2 jumpers allow you to configure the Flash EPROM chip:

**Table 6-2**
**EPROM Type Selection**

| Flash EPROM | EP1 Pin Pairs | EP2 Pin Pairs |
|---|---|---|
| 1M * | 1-2 | 1-2 |
| 2M* | 2-3 | 2-3 |

*Default

When flashing an Intel-manufactured EPROM, move the EP jumper from pins 1-2 to 2-3. After flashing is complete, return the jumper to pins 1-2.

To determine the EPROM manufacturer, locate the Award Flash EPROM chip located near the external battery. Lift the black-on-silver label; the manufacturer's name is printed on the chip.

## 6.1.3    CPU External Clock (Bus) Frequency (CLK)

The CLK1, CLK2, and CLK3 jumpers allow you to set the different CPU speed configurations. Table 6-4 shows the jumper settings for the different bus speed configurations.

**Table 6-3**
**CPU External Clock Frequency Settings**

| External (CPU/CLK) | CLK1 Pin Pairs | CLK2 Pin Pairs | CLK3 Pin Pairs |
|---|---|---|---|
| 66 MHz* | 1-2 | 1-2 | 1-2 |
| 60 MHz | 2-3 | 1-2 | 1-2 |
| 55 MHz | 2-3 | 2-3 | 1-2 |

*Default setting.

### 6.1.4  CPU to SRAM Data Transacting Mode Selection (SRAM)

The SRAM jumper allows you to select the CPU to SRAM data read/write mode.

**Table 6-4**
**SRAM Pin Pairs**

| Mode | Pin Pair |
|---|---|
| Intel Burst (Default) for Intel Pentium CPUs, AMD-K%, Cyrix, IBM* | 1-2 |
| Linear Burst | 2-3 |

*Default setting.

### 6.1.5  Jumper Settings

The following table identifies the jumper settings for each processor frequency for the Pentium with MMX Technology system boards:

> △ **CAUTION:** Do not configure the system board to operate faster than the speed at which the processor is rated. Doing this could result in unreliable operation or processor damage.

**Table 6-5**
**Pentium with MMX Technology**
**System Board Jumper Settings**

| CPU Speed (MHz) | External (CPU/CLK) (MHz) | CLK1 | CLK2 | CLK3 | CPU Clock Rate | | |
|---|---|---|---|---|---|---|---|
| | | | | | FREQ1 | FREQ2 | FREQ3 |
| **Pentium with MMX Technology** | | | | | | | |
| 233 | 66 | 1-2 | 1-2 | 1-2 | 1-2 | 1-2 | 1-2 |
| 200 | 66 | 1-2 | 1-2 | 1-2 | 1-2 | 2-3 | 1-2 |
| 166* | 66 | 1-2 | 1-2 | 1-2 | 2-3 | 2-3 | 1-2 |

*Default setting

> ✎ Refer to Table 6-1 for a description of the CLK and FREQ jumpers.

### 6.1.6  Clearing Configuration

The computer's configuration (CMOS) may occasionally be corrupted. When it does, it is necessary to clear the CMOS memory.

To clear and reset the configuration, run the CMOS Setup Utility described in Chapter 7, "Utilities."

### 6.1.7  Changing the Real-Time Clock (RTC) Battery

Refer to Chapter 5, "Removal and Replacement Procedures," for complete instructions on installing a replacement RTC battery.

## 6.2    Hard Drives

For more information about Compaq hard drives, refer to Appendix C in this guide.

### 6.2.1    1.6-GB IDE Hard Drive Jumper Settings

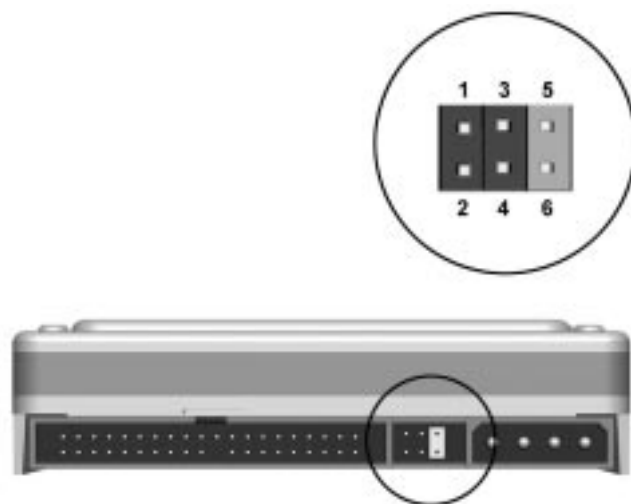The jumper settings for the 1.6-GB EIDE hard drive are shown below.



*Figure 6-3.* 1.6-GB EIDE Hard Drive Jumper Settings

**Table 6.6**
**Seagate EIDE-Hard Drive Jumper Settings**

| Drive Application | Jumpers |
| --- | --- |
| Single drive | 5 to 6 |
| Primary drive | 5 to 6 and 3 to 4 |
| Secondary drive | no connection |
| Cable Select | 3 to 4 |

# *chapter* 7

# UTILITIES

## 7.1 CMOS Setup Utility

### 7.1.1 Using the CMOS Setup Utility

Execute the CMOS Setup Utility when you upgrade or repair the computer, change the battery, encounter a POST error, or choose to make a change to any of the default CMOS settings. To use the utility:

1. Turn the computer off, then on.
2. Press the **Delete** key when the message "Press DEL to enter Setup" appears on the screen.
3. Use the arrow keys to highlight the setup feature you want to change.
4. Press **Enter** to open the selected setup feature.
5. Use the arrow keys to highlight the value you want to change.
6. Use the **Page Up** or **Page Down** keys to change the selected value.
7. Press **Esc** to return to the main menu.
8. Follow the on-screen instructions to save the changes and exit or to exit the utility without saving any changes.

#### 7.1.1.1 Safeguarding CMOS Settings

If you choose to change the default settings, you will want to restore those settings if the CMOS is ever corrupted or the battery loses power.

To safeguard these settings, write them down, make a print screen of each CMOS setup page, or use third-party CMOS rescue software to store the settings in a file on a write-protected diskette.

#### 7.1.1.2 Restoring CMOS Settings

If you are able to access the CMOS Setup Utility, reload the BIOS defaults available in the CMOS Setup Utility or restore the safeguarded settings stored on the write-protected diskettes.

If you are unable to access the CMOS Setup Utility, remove the battery for about five minutes, then return it to restore the default settings. See Chapter 5, "Removal and Replacement Procedures."

### 7.1.2 Important CMOS Settings

#### 7.1.2.1 Standard CMOS Setup

You can change the following settings in Standard CMOS Setup:

■   Date and time

■   Floppy disk drive types for drive A: and B:

---

*Compaq Deskpro 1000 Series of Personal Computers*    **7-1**

- Floppy mode support
- Bootup video display mode
- POST error handling selections
- Hard disk configurations

  ✎ You can set Hard Disk Type to Auto to automatically detect the drive type. However, if you choose to not use Auto, do a screen print screen or make a note of the hard disk configuration settings for every hard drive on your computer so that you can reenter these values if CMOS becomes corrupted.

### 7.1.2.2 BIOS Features Setup

The BIOS features have already been preset at the factory, and users are advised not to run the BIOS and Chipset Features Setup programs. Improper setup may cause the system to fail.

## 7.1.3 Passwords

The supervisor and user passwords limit access to different functions of the computer.

The supervisor password protects the system configuration settings from unauthorized modification. The user password prevents unauthorized access to data stored on the computer or computer network.

Under the BIOS Feature Setup, you have the option to be prompted for a password every time you start the computer or only when you enter the CMOS Setup Utility. Select an option under the BIOS Feature Setup to be prompted for the:

- Supervisor Password every time you try to start the CMOS Setup Utility and be prompted for the User Password every time you turn on the computer. Select System under the Security Option field.
- User password only when you turn on the computer. Select Setup under the Security Option field.

### 7.1.3.1 Establishing a Password

1. From Setup, select the Supervisor Password or User Password option.
2. Enter the password.
3. You will be asked to confirm the password. Retype the password and press **Enter.**

   ✎ If necessary, you may press **Esc** to abort the password selection and not enter a password.

### 7.1.3.2 Entering a Password

When prompted, enter your current password.

✎ Type carefully; for security reasons, the characters you type do not appear on the screen.

### 7.1.3.3 Disabling a Password

1. From Setup, select the Supervisor Password or User Password that you want to disable.
2. When you are prompted to enter the established password, press **Enter.** A message appears confirming the password is disabled.

**7.1.3.4    Changing a Password**

To change a password, complete the following steps:

1.  Disable the established password by pressing **Enter** when prompted for the current password.

2.  Establish a new password by following the instructions in "Establishing a Password" in this chapter.

**7.1.3.5    Clearing a Password**

If you forget your password, you cannot access the computer. You will need to disable the password feature by setting the appropriate jumper on the system board. You will then be able to access your computer.

1.  Turn off the computer and any external devices.

2.  Disconnect the power cord from the power outlet and any external devices from the computer.

3.  Remove the computer cover.

4.  Locate Jumper CPW.
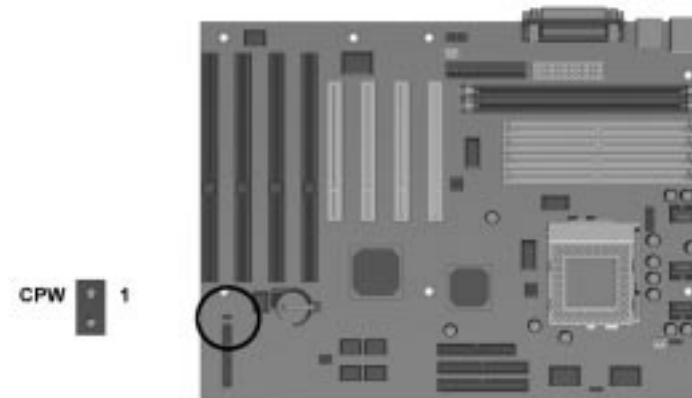


*Figure 7-1.* *Locating the Password Jumper on the System Board*

5.  Remove the jumper from the single pin and reinstall it over both pins.

6.  Leave the jumper on for approximately 60 seconds.

7.  Remove the jumper from both pins and reinstall on a single pin.

8.  Replace the computer cover.

9.  Restart the computer.

## 7.1.4    IDE HDD Auto Detection

The IDE HDD Auto Detection feature automatically configures the new hard drive, and allows you to set the parameters of up to four IDE hard drives. The option with (Y) is recommended by the system BIOS. You may also key in your own parameters instead of having the system BIOS set them for you. After modifying the settings, press the **Esc** key to return the main menu. For confirmation, enter the Standard CMOS Setup feature.

## 7.1.5    Save and Exit Setup

To save the changed CMOS settings:

1. Press **Esc** to return to the main menu.

2. Press "Save and Exit Setup" The message "SAVE to CMOS and EXIT (Y/N)?" will appear at the center of the screen.

3. Press Y [**Enter**] to save the changes, or

4. Press F10 (Save and Exit Setup) then press Y [**Enter**].

If you do not make any changes or if you want to cancel the changes you just made, see "Exit Without Saving," in this chapter.

### 7.1.6    Exit Without Saving

If you want to cancel the changes you made to CMOS:

1. Press Esc to return to the main menu.

2. Select "Exit Without Saving." [**Enter**].The message "Quit Without Saving?" appears on the screen.

3. Press Y [**Enter**] to exit without saving the changes you just made.

## 7.2    Upgrading the BIOS

⚠  **WARNING:** Do not turn off or reset the computer during the flash process. It will corrupt the BIOS data.

1. Create a bootable floppy diskette.

2. Place the bootable diskette containing the BIOS file and the Flash Utility in drive A, and reboot the system in MS-DOS (Version 6.22 is preferred).

3. At the A: prompt, type the Flash BIOS utility and the BIOS file with its extension. For example:

   flash531  615J900.bin

4. At the Flash Memory Write menu:

   To save the current BIOS settings, select **Y** then type the current BIOS name and the extension after **FILE NAME TO SAVE.** For example:

   613J900.bin

   If you do not want to save your current BIOS, select **N.**

5. Confirm the selection.

6. When the screen displays the message **Power Off or Reset the System**, remove the diskette, hold down the END key, and restart the system.

   ✎    You must depress the **End** key prior to power-on until you enter CMOS setup. If this is not done when restarting the system after upgrading the BIOS, the system will not start properly.

## 7.3    Configuring Windows Display and Monitor

When you first set up the computer and monitor, the Windows 95 operating system detects the monitor type, selects the best display configuration, and installs the appropriate display drivers.

This automated setup is referred to as Plug and Play; there are no switches to set or manual procedures to follow; just plug it in.

✎ A monitor with Asset Control is required for the Plug and Play setup to work. If you do not have a Plug and Play monitor, you can set up the display manually.

### 7.3.1 Supported Resolutions

Resolutions supported by the graphics controller installed on the Compaq LGX Personal Computer are presented in Chapter 8, "Specifications."

### 7.3.2 Changing Monitor Type Manually in Windows 95

If you are using Windows 95, the operating system automatically recognizes all Plug and Play monitors. If you are not using a Plug and Play monitor, select Display in the Control Panel and. follow the on-screen instructions to make the change.

### 7.3.3 Setting Graphics Resolution

The quality of the picture you see depends on the resolution of the monitor and the number of colors that are displayed. Although the setup utility automatically selects the display configuration, you can manually change the resolution to match a software program or to suit personal preferences. Select Display in the Control Panel and. follow the on-screen instructions to make the change.

### 7.3.4 Establishing a Password in Windows 95

To establish a password in Windows 95, complete the following steps:

1. Go to the Control Panel.
2. Double-click the Passwords icon and follow the instruction to set a new password.

## 7.4 Diagnostics Software

✎ Diagnostics software is not included with this computer. Compaq diagnostics software Version PC 10.25A, is available from your Compaq authorized dealer, reseller, or service provider, or the Compaq world-wide web site at WWW.COMPAQ.COM. Diagnostics software is also available from third-party diagnostics software provider.

*chapter* $8$

# SPECIFICATIONS

This chapter provides physical, environmental, and performance specifications for the computer, keyboard, and mass storage devices.

## 8.1    System

### Table 8-1
### System Specifications

|  | Metric | U. S. |
|---|---|---|
| **Dimensions** | | |
|     Height | 16.51 cm | 6.5 in |
|     Width | 42.88 cm | 16.88 in |
|     Length | 41.28 cm | 16.25 in |
| **Weight** | 10.40 kg | 22.9 lb |
| **Power Supply** | | |
|     Operating Voltage Range | 180-264 VAC | 90-132 VAC |
|     Rated Voltage Range | 200-240 VAC | 100-120 VAC |
|     Rated Line Frequency | 50 - 60 Hz | 50 - 60 Hz |
| **Rated Input Current** (maximum) | 3 A | 6 A |
| **Power Output** | 200 W | 200 W |
| **Environmental Requirements** | | |
|     **Temperature** | | |
|     Operating | 10° to 35°C | 50° to   95°F |
|     Shipping | -20° to 60°C | -4° to 140°F |
|     **Humidity (noncondensing)** | | |
|     Operating | 8% to 90% | 8% to 90% |
|     Nonoperating | 5% to 95% | 5% to 95% |
|     Maximum Altitude (unpressurized) | | |
|     Operating | 3048 m | 10,000 ft |
|     Nonoperating | 9144 m | 30,000 ft |
| Heat Dissipation (nominal) | 3.23 kg-cal/min | 770 Btu/hr |

**Table 8-2**
**System Interrupts**

| Hardware IRQ | System Function |
| --- | --- |
| IRQ 0 | Timer Interrupt (Not on ISA Bus) |
| IRQ 1 | Keyboard (Not on ISA Bus) |
| IRQ 2 | Interrupt Controller Cascade (Not on ISA Bus) |
| IRQ 3 | Serial Port (COM 2) |
| IRQ 4 | Serial Port (COM 1) |
| IRQ 5 | Enhanced Business Audio* |
| IRQ 6 | Diskette Drive |
| IRQ 7 | Parallel Port (LPT 1) |
| IRQ 8 | Real-Time Clock (Not on ISA Bus) |
| IRQ 9 | Free for PCI Use |
| IRQ 10 | Free for PCI Use |
| IRQ 11 | PCI Interrupt |
| IRQ 12 | Mouse |
| IRQ 13 | Coprocessor (Not on ISA Bus) |
| IRQ 14 | IDE Interface (Hard Disk and Primary IDE Drive) |
| IRQ 15 | CD-ROM (Secondary IDE/Drive) |

*Default configuration; other configurations = IRQ7, IRQ9, IRQ10, None

**Table 8-3**
**System DMA**

| Hardware DMA | System Function |
| --- | --- |
| DMA 0 | Unused |
| DMA 1 | Business Audio (Default; Alternate = DMA0, DMA3, None) |
| DMA 2 | Diskette Drive |
| DMA 3 | ECP Parallel Port LPT1 (Default; Alternate = DMA 0) |
| DMA 4 | DMA Controller Cascading (Not on ISA Bus) |
| DMA 5 | Unused |
| DMA 6 | Unused |
| DMA 7 | Unused |

## Table 8-4
## System I/O

| I/O Address (Hex) * | System Function (Shipping Configuration) |
| --- | --- |
| 000 - 00F | 8237 DMA Controller #1 |
| 020 - 02F | 8259A Master Programmable Interrupt Controller |
| 040 - 05F | Programmable Internal Timer |
| 060 - 06F | Keyboard Controller |
| 070 - 071 | System CMOS/RTC, also NMI Enable/Disable |
| 080 | Manufacture System Check Point Port |
| 081 - 09F | DMA Page Registers |
| 0A0 - 0BF | Second 8259 Programmable Interrupt Controller |
| 0C0 - 0DF | DMA Controller #2 |
| 0F0 - 0FF | Numeric Data Processor |
| 170 – 17F | Secondary IDE Controller |
| 1F0 - 1FF | Primary IDE Controller |
| 200 | Gameport (only if you have a sound card installed) |
| 201 | Gameport (only if you have a sound card installed) |
| 278 - 27F | Third Parallel Port |
| 2E8 - 2EF | COM4 (if you set COM4) |
| 2F8 - 2FF | COM2 |
| 370 - 377 | Secondary Diskette Controller (if present)) |
| 378 - 37F | Second Parallel Port |
| 3B0 - 3BF | Monochrome Display Adapter/Primary Parallel Port |
| 3C0 - 3CF | EGA/VGA Adapter |
| 3D0 - 3DF | Color Graphic Adapter |
| 3E8 - 3EF | COM3 (if you set COM3) |
| 3F0 - 3F7 | Primary Diskette Controller |
| 3F8 - 3FF | COM1 |
| 04D0 - 04D1 | PIC Edge/Level Control Register |
| 0CF8 - 0CFF | PCI Configuration Register |
| 6000 - FFFF | PCI Device I/O Space |

*All I/O addresses below 100 are reserved by the chipset even if they are not used.

**Table 8-5**
**System Memory Map**

| Size* | Memory Address (Hex) | System Function |
|---|---|---|
| 64 KB | FFFFFFFFh to FFFF0000h | System ROM |
| 1504 MB | FDFFFFFFh to A0000000h | PCI Memory Expansion |
| 510 MB | 1FF00000h to 00100000h | System Memory |
| 64 K | 000FFFFFh to 000F0000h | System ROM |
| 64 KB | 000EFFFFh to 000E0000h | Reserved |
| 96 KB | 000DFFFFh to 000C8000h | Reserved |
| 32 KB | 000C7FFFh to 000C0000h | Video ROM |
| 128 KB | 000BFFFFh to 000A0000h | Video RAM |
| 640 KB | 0009FFFFh to 00000000h | Base Memory |

*All memory above the first 256 MB is non-cacheable. All PCI memory is non-cacheable.

# 8.2 Drives

|  | |
|---|---|
| **Table 8-6** | |
| **Diskette Drive** | |

| | 1.44 MB |
|---|---|
| **Size and Capacity** | |
| Size (cm) | 8.9 |
| Size (in) | 3.5 |
| High Density (MB) | 1.44 |
| Low Density (KB) | 720 |
| **Light** | Green |
| **Height** | One-third |
| **Bytes per Sector** | 512 |
| **Sectors per Track** | |
| High Density | 18 |
| Low Density | 9 |
| **Tracks per Side** | |
| High Density | 80 |
| Low Density | 80 |
| **Read/Write Heads** | 2 |
| **Average Seek Time (Mb/s)** | |
| Track-to-Track (high/low) | 3/3 |
| Average (high/low) | 94/94 |
| Latency Average (ms) | 100 |

# Table 8-7
# EIDE Hard Drive

|  | 1.6-GB |
|---|---|
| **Formatted Capacity** | |
| Physical (MB) | 1624.7 |
| Logical (MB) | 1624.7 |
| **Compaq Spare Part Number** | 333816-001 |
| **Drive Type** | 65 |
| **Transfer Rate** | |
| Interface (Mbytes/sec) | 16.7 |
| **Typical Seek Time  (including settling)** | |
| Single Track (ms) | 3.0 |
| Average (ms) | 13.0 |
| Full Stroke (ms) | 22.0 |
| **Disk Rotational Speed (rpm)** | 5400 |
| **Cylinders** | |
| Logical | 3390 |
| **Data Heads** | |
| Logical | 16 |
| Sectors per Track | |
| Logical | 63 |
| Buffer Size (KB) | 128 |

## 8.3    Mouse

**Table 8-8**
**2-Button Mouse**

|  | Metric | U.S. |
|---|---|---|
| **Dimensions** | | |
| Height | 3.4 cm | 1.34 in |
| Length | 11.3 cm | 4.45 in |
| Width | 6.0 cm | 2.36 in |
| **Weight** | 130 g | 4.59 oz |
| **Base Resolution** | 400 dpi | 400 dpi |
| **Tracking Speed** (maximum) | 25 cm/sec | 10 in/sec |
| **Temperature** | | |
| Operating | 0°C to 40°C | 32°F to 104°F |
| Storage | -20°C to 60°C | -4°F to 140°F |
| **Lifetime** | | |
| Mechanical | Exceeds 483 km | Exceeds 300 miles |
| Switch | Exceeds 1 million operations | Exceeds 1 million operations |
| **Relative Humidity** | 10% to 90%, noncondensing | 10% to 90%, noncondensing |
| **ESD** | No soft errors through 10 kV; | |
| | No hard errors through 15 kV; specific performance depends on host system | |

## 8.4    Keyboard

**Table 8-9**
**Compaq Enhanced Keyboard**

|  | Metric | U.S. |
|---|---|---|
| **Dimensions** | | |
| Height | 4.0 cm | 1.58 in |
| Length | 45.6 cm | 17.95 in |
| Width | 16.8 cm | 6.63 in |
| **Weight** | 0.9 kg | 1.98 lb |

# 8.5 Supported Graphics Resolutions

**Table 8-10**
**Supported Graphics Resolutions**
**S3 Trio64V2/DX Graphics Card**

| Resolution | 1-MB DRAM | 2-MB DRAM |
| --- | --- | --- |
| 1280 × 1024 | 16 @ 75 Hz | 256 @ 75 Hz |
| 1024 × 768 | 256 @ 85 Hz | 64K @ 75 Hz |
| 800 × 600 | 655K @ 85 Hz | 16.7M @ 75 Hz |
| 640 × 480 | 655K @ 85 Hz | 16.7M @ 75 Hz |

*appendix* A

# CONNECTOR PIN ASSIGNMENTS

This appendix contains the pin assignments for all external connectors:

**Table A-1**
**Keyboard**
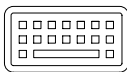
| Connector | | Pin | Signal |
|---|---|---|---|
| | | 1 | Data |
| | | 2 | Unused |
| | | 3 | Ground |
| | | 4 | +5 VDC |
| | | 5 | Clock |
| | | 6 | Unused |

**Table A-2**
**Mouse**
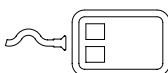
| Connector | | Pin | Signal |
|---|---|---|---|
| | | 1 | Data |
| | | 2 | Unused |
| | | 3 | Ground |
| | | 4 | +5 VDC |
| | | 5 | Clock |
| | | 6 | Unused |

## Table A-3
## Parallel Interface
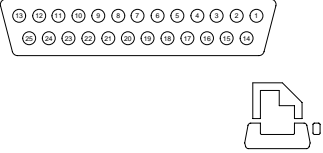
| Connector | Pin | Signal |
|---|---|---|
| | 1 | Strobe# |
| | 2 | Data Bit 0 |
| | 3 | Data Bit 1 |
| | 4 | Data Bit 2 |
| | 5 | Data Bit 3 |
| | 6 | Data Bit 4 |
| | 7 | Data Bit 5 |
| | 8 | Data Bit 6 |
| | 9 | Data Bit 7 |
| | 10 | Acknowledge# |
| | 11 | Busy |
| | 12 | Paper End |
| | 13 | Select |
| | 14 | Auto Linefeed# |
| | 15 | Error# |
| | 16 | Initialize Printer# |
| | 17 | Select IN# |
| | 18-25 | Signal Ground |

## Table A-4
## Serial Interface
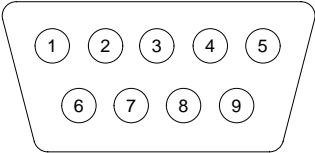
| Connector | Pin | Signal |
|---|---|---|
| | 1 | Carrier Detect |
| | 2 | Receive Data# |
| | 3 | Transmit Data# |
| | 4 | Data Terminal Ready |
| | 5 | Signal Ground |
| | 6 | Data Set Ready |
| | 7 | Request to Send |
| | 8 | Clear to Send |
| | 9 | Ring Indicator |

**Table A-5**
**VGA Monitor**

| Connector | | Pin | Signal |
|-----------|---|-----|--------|
| | | 1 | Red Analog |
| | | 2 | Green Analog |
| | | 3 | Blue Analog |
| | | 4 | Monitor ID Bit2 |
| | | 5 | Ground |
| | | 6 | Ground Analog |
| | | 7 | Ground Analog |
| | | 8 | Ground Analog |
| | | 9 | Not Connected |
| | | 10 | Ground |
| | | 11 | Monitor ID Bit 0 |
| | | 12 | Bidirectional Data (SDA)* |
| | | 13 | Horizontal Sync |
| | | 14 | Vertical Sync |
| | | 15 | Data Clock (SCL)* |

*For DDC support ($I^2C$ monitors)

**Table A-6**
**USB Connector**
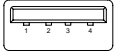
| Connector | | Pin | Signal |
|-----------|---|-----|--------|
| | | 1 | VCC |
| | | 2 | - Data |
| | | 3 | + Data |
| | | 4 | Ground |

## Table A-7
## IDE Drive Cable

```
49                                    1
 ┌──────────────────────────────────┐
 │ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ │
 │ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □    □ □ □ □ □ □ □ □ □ □ │
 └──────────────────────────────────┘
50                                    2
```
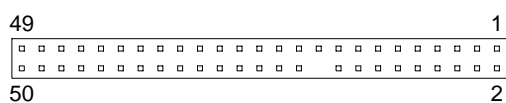
| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1 | RESDRV | 26 | GND |
| 2 | GND | 27 | IOCHRDY |
| 3 | D07 | 28 | CABLE SELECT |
| 4 | D08 | 29 | DAK |
| 5 | D06 | 30 | GND |
| 6 | D09 | 31 | IRQ |
| 7 | D05 | 32 | IO16 |
| 8 | D10 | 33 | A1 |
| 9 | D04 | 34 | PDIAG |
| 10 | D11 | 35 | A0 |
| 11 | D03 | 36 | A2 |
| 12 | D12 | 37 | CS1FX |
| 13 | D02 | 38 | CS3FX |
| 14 | D13 | 39 | DASP |
| 15 | D01 | 40 | GND |
| 16 | D14 | 41 | AUDIO_R |
| 17 | D00 | 42 | AUDIO_L |
| 18 | D15 | 43 | A_GND_R |
| 19 | GND | 44 | A_GND_L |
| 20 | (KEY) | 45 | +5VMOT1 |
| 21 | DREQ | 46 | +5VMOT2 |
| 22 | GND | 47 | +5VMOT3 |
| 23 | IOW | 48 | +5VMOT4 |
| 24 | GND | 49 | +5VMLOG1 |
| 25 | IOR | 50 | +5VMLOG2 |

*appendix* *B*

# POWER CORD SET REQUIREMENTS

The voltage select switch feature on the computer permits it to operate from any line voltage between 100-120 or 220-240 volts AC.

The power cord set received with the computer meets the requirements for use in the country where you purchased the equipment.

Power cord sets for use in other countries must meet the requirements of the country where you use the computer. For more information on power cord set requirements, contact your authorized Compaq dealer, reseller, or service provider.

## General Requirements

The requirements listed below are applicable to all countries:

1. The length of the power cord set must be at least 1.8 m (6.00 feet) and a maximum of 3.0 m (9.75 feet).

2. All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.

3. The power cord set must have a minimum current capacity of 10A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system.

4. The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector, for mating with appliance inlet on the Switch Box.

# Country-Specific Requirements

| Power Cord Set Requirements—By Country | | |
|---|---|---|
| **Country** | **Accredited Agency** | **Applicable Note Numbers** |
| Australia | EANSW | 1 |
| Austria | OVE | 1 |
| Belgium | CEBC | 1 |
| Canada | CSA | 2 |
| Denmark | DEMKO | 1 |
| Finland | SETI | 1 |
| France | UTE | 1 |
| Germany | VDE | 1 |
| Italy | IMQ | 1 |
| Japan | MITI | 3 |
| Norway | NEMKO | 1 |
| Sweden | SEMKO | 1 |
| Switzerland | SEV | 1 |
| United Kingdom | BSI | 1 |
| United States | UL | 2 |

NOTES:

1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm$^2$ conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.

2. The flexible cord must be Type SJT or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15A, 125V) or NEMA 6-15P (15A 250V) configuration.

3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 0.75 mm$^2$ conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (15A, 125V) configuration.

# *appendix* *C*

# HARD DRIVES

Compaq Computer Corporation uses IDE hard disk drives that conform to two different primary/secondary implementations. These are Conner mode and ATA-compatible mode. These two modes are incompatible with one another.

## Device 0/Device 1 Relationship

A device 0/device 1 relationship exists when there are two hard drives connected to a single port. In this situation, one drive must be designated as the device 0, or primary, drive and the other as the device 1, or secondary, drive. This designation is necessary because both drives cannot work simultaneously.

## Cable Select

The Compaq Deskpro 1000 Series of Personal Computers uses cable-select technology for identifying Device 0 (primary) and Device 1 (secondary) IDE hard drives. Check that the jumpers on the IDE hard drive are set properly for cable-select installation. Always check the label on the drives or check Chapter 6 of this manual when a new drive is added to verify that the jumper settings are set correctly.

■ Cable select may not function properly if drives other than those supported by Compaq are installed.

■ The second drive on a cable-select cable can be a CD-ROM drive. However, the CD-ROM drive must be installed in the device 1 position if a hard drive is installed on the same cable. Ensure that both drives are set for cable-select configuration. See Chapter 6 for more information.

■ If two drives are already connected to the primary IDE controller and an additional drive is to be installed, the secondary IDE controller must be enabled. The secondary IDE controller can be enabled by checking this option after opening the Advanced box in the Mass Storage group of F10 Computer Setup. See Chapter 7 for more information.

■ When more than two drives are installed, drive performances are best when the two faster drives are connected to the primary IDE controller and the slower drive is connected to the secondary IDE controller.

■ A hard drive is installed and configured more quickly when it has first been formatted.

■ If your new drive includes the cable-select feature, no jumper setting changes are required. Refer to the documentation supplied with the cable for instructions on using the cable select feature. If you install a third-party hard drive, you will need to purchase a jumper cable (spare part number 247568-001) from Compaq Computer Corporation.

## IntelliSafe - SMART

The IntelliSafe IDE hard drives for the Compaq Deskpro 1000 Series of Personal Computers have built-in drive failure prediction that warns the user or the network administrator of an impending failure or crash of the hard drive.

## Automatic Soft-Drive Types

An automatic soft-drive type is a mechanism where the system ROM and Computer Setup provide support for IDE hard drives that are not supported in the hard drive parameter table. Computer Setup automatically builds a soft-drive type when it finds that a hard drive is not in the hard drive parameter table.

The soft-drive types assign according to the table below:

### Table C-1
### Soft-Drive Type Assignments

| Drive | Hard Drive Type | Controller |
|-------|-----------------|------------|
| 0 | 65 | Primary |
| 1 | 66 | Primary |
| 0 | 68 | Secondary |
| 1 | 15 | Secondary |

For hard drives that are greater than 528 MB, the system automatically translates the hard drive parameter for DOS by logically halving the cylinders and doubling the heads. This allows DOS to access greater than 528 MB. The translated hard drive parameters are put into the hard drive parameter table in the shadow RAM copy of the system ROM. When using any operating system other than DOS, you must use the Compaq User Diagnostic diskette to set up the hard drive parameter table without translation.

# Index